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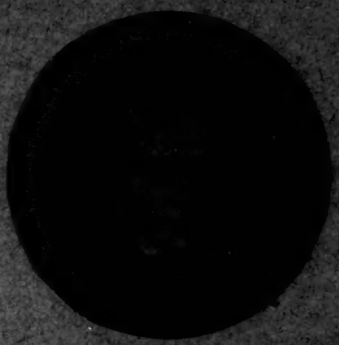

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NOTES ON PENETRATING WOUNDS OF THE BRAIN.

BY

HARVEY CUSHING, M.D., HON. F.R.C.S.ENG.,

DIRECTOR U.S. ARMY BASE HOSPITAL NO. 5.

IN the later part of July three contiguous casualty clearing stations in a certain army area were designated as a centre for the reception of all wounds of the head occurring during an expected period of military activity.

To one of these hospitals the writer was attached for three months, and on taking up his duties endeavoured to make an estimate of what might be:

1. The operation mortality at all three hospitals combined.
2. The proportion to one another of simple scalp wounds, cranial injuries without dural penetration, and cranio-cerebral wounds, respectively, among all the cases forwarded from the field ambulances on the front concerned, with an initial diagnosis of "head or scalp wound."

Toward this end a combined record was made of all cases admitted with the above general diagnosis during the first two weeks of the three-month period, verifying it and particularizing it in each case whenever an operation or other circumstance rendered this possible. This actually proved to be possible in only about half the total, as in times of pressure many of the lighter cases were of necessity immediately evacuated. It is probable that the majority of the wounded, thus passed on without operative investigation, had injuries confined to the scalp, or to the scalp and cranium, though it must be admitted that among walking wounded it is not uncommon to find men with penetrating wounds of the brain.

FIG. 1.—Flap incision for penetrating wound of anterior temporal region. Gutta-percha drain through unexcised wound. Condition at first dressing after forty-eight hours, when sutures and drain should be removed.

The net results of the study were as follows: Taking as 100 the total number of cases admitted with an initial diagnosis of some form of "head wound," the percentage with dural penetration was 23.5. Taking the verified cases alone, the percentage with dural penetration was 49.3.

Of these 49.3 per cent. verified cases approximately one-third died without operation, their injuries being either of extreme gravity or multiple. Of the remaining two-thirds, all were submitted to operation, and exactly half of the patients subsequently died, thus giving the generally accepted 50 per cent. operation mortality for wounds of this type.

The foregoing figures relate, as has already been indicated, to all the three hospitals during the first two weeks of the three-month period. For comparison the following figures covering the whole three months may be given for the cases that came under the supervision of the writer's team. Of the cases submitted to operation, 10.9 per cent. proved to have merely scalp wounds, 23.7 per cent. cranial wounds with intact dura, 60.7 per cent. cranial wounds with dural penetration, and 4.5 per cent. bursting fractures of the cranium but with the scalp and dura both intact. In most of the cases with simple scalp wounds or depressed fractures the conditions had been such as to lead us to anticipate finding a dural penetration.

During the initial two weeks to which reference has been made, the operation mortality for the writer's own team was above the average figure for all the hospitals together. This may be accounted for in some measure by the fact that during this period, as also during the entire three months, wounds of the more serious type were deliberately selected from among the cases retained at the hospital. This is indicated by the relative height of the percentage of cases with dural penetration (60.7) as compared with the corresponding percentage (49.3) for the whole of the verified cases during the first two weeks.

It was with the penetrating wounds, in short, that we were chiefly concerned, and a serious effort was made to see whether the accepted mortality figure of *circa* 50 per cent. could not be lowered by improvement in technique, and a more intimate supervision of each individual case from start to finish. Careful records have been kept of the 225 cases which came under the care of the team; of these 6 died without intervention, the remaining 219 were operated upon, and 133 proved to have dural penetration. The net results are best shown by dividing these 133 cases into thirds roughly corresponding with each consecutive month of service.

First	44 cases with	24 deaths	= 54.5 per cent.
Second	44 "	18 "	= 40.9 "
Third	45 "	13 "	= 28.8 "

These percentages, which are practically end results, for no cases were evacuated until they had passed the stage of conceivable complications, are sufficiently encouraging to justify the hope that a still further lowering of the mortality may be attained, and that in an advanced hospital 75 per cent. of recoveries is not too large a figure to be set as a goal.

The improved figures do not mean that more favourable cases were selected as time went on, for, on the contrary, as the results improved the general tendency was to undertake operations on more and more unpromising injuries, particularly of the cranio-cerebro-facial type, in many of which radical measures in the earlier weeks of the service would hardly have been attempted. Indeed, on two occasions six consecutive deaths occurred in the series, due to an uncontrollable gas encephalitis which had become established in cases "lying out" for two or three days after a battle.*

* In computing these mortality figures no cases whatever have been eliminated, even when the ultimate cause of death—including tetanus, gas poisoning, complications from wounds elsewhere, spinal cord transection, and so on—was obviously unrelated to the cranio-cerebral injury. Should one begin to eliminate these complicated cases in making out his mortality percentages the figures would lose all their comparative value, for there can be no agreement as to what conditions may justifiably be excluded.

Detailed mortality figures for penetrating wounds of the dura are rarely given, and when given are variously computed. This is unfortunate, for it is only by comparison with such estimates that one can tell whether his end results are better or worse than the average.

That the mortality percentage is high is commonly admitted. Colonel Sargent has made the statement in an unpublished address that "in the first two years of the war 45 per cent. of patients with perforating (penetrating?) wounds operated upon in field ambulances and casualty clearing stations died in the base hospitals." If, therefore, nearly half of the cases operated upon succumbed at the forward hospitals before evacuation, as is more than likely, and nearly half of those evacuated subsequently died at the base, the total mortality must have been in the neighbourhood of 70 per cent.

Colonel Gray, however, in his paper (BRITISH MEDICAL JOURNAL, February 19th, 1916) states that in 392 cases trephined in the base hospitals at R—— there were 58 deaths, a mortality rate of 14.8 per cent. He adds that if 12 "hopeless" cases which died within forty-eight hours of admission are excluded from the series, the mortality is only 9 per cent. This estimate is lower than the mortality figures at a casualty clearing station, for the non-penetrating cranial wounds

The surgical care of the wounds of modern warfare is very much of a specialty, and, no matter what may have been an operator's previous training and experience with traumatic surgery, he finds himself ill prepared for his tasks; indeed, his fixed habits of work acquired in the favourable surroundings of a civil hospital and his unfamiliarity with infections may prove a handicap rather than an asset. This applies possibly even more to the surgeon who in civil practice has specialized in a comparatively narrow field than it does to the surgeon whose work has been more generalized. However, during the three-month period an operation, with certain technical devices applicable to the average penetrating wound, was gradually evolved; and as the lowered mortality percentages of the later series can be ascribed to it, the method may deserve description. Aside, possibly, from the principle of track suction there is nothing original about the procedure, nor are the instruments new, though they do not seem to have been commonly utilized, at least in the British overseas hospitals.

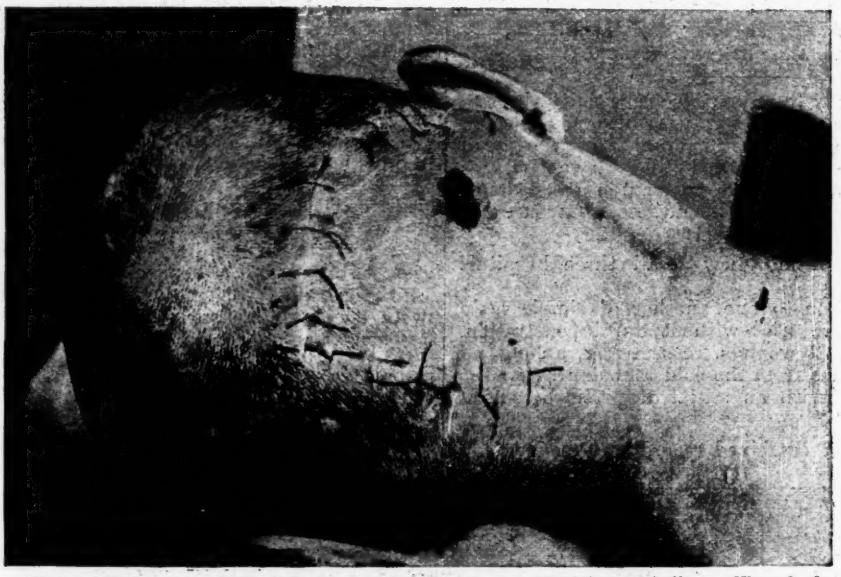

FIG. 2.—Unilateral occipital flap for penetrating wound of right cerebellum. Wound of entrance unexcised. Condition on sixth day. Sutures should have been removed earlier. Those of silkworm-gut are deeply cutting; those of black silk remain dry.

The main features of the procedure lie:

1. In the *removal en bloc* rather than piecemeal of the *area of cranial penetration.*

2. In the *detection of the indriven bony fragments by catheter palpation of the track* rather than by the exploring finger.

3. In the *suction method of removal of the disorganized brain*, thereby cleansing the track of the so-called pulped or devitalized tissue, whose retention, as is the case with dead tissue anywhere, favours infection.

4. In *the use of dichloramine-T in oils as an antiseptic* particularly suitable for infections in the central nervous tissues.

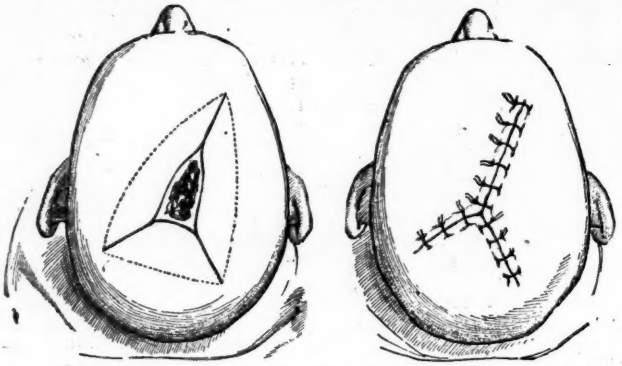

FIG. 3.—Tripod incision for small irregular wound of vault. Dotted lines indicate area of reflection of flaps.

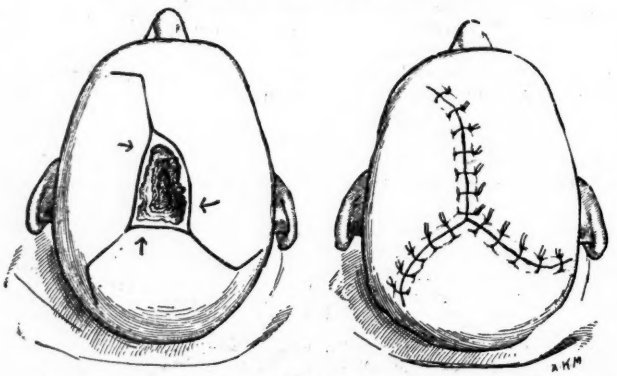

FIG. 4.—Three-legged (Isle of Man) incisions for larger wound of cranial vault.

In addition to these more essential features of the performance, the routine pre-operative neurological study of the case stereoscopic *x*-ray negatives, the shaving of the entire scalp, the invariable use of local anaesthesia, preferential radial (tripod) rather than flap incisions, foreign body extraction with the magnet when possible, closure of the wounds with buried sutures in the galea, the dressing of all serious cases in the operating room rather than in the wards—all these steps, though less novel, were, nevertheless, contributory to the successful outcome of the more severe cases.

1. THE ORGANIZATION OF THE OPERATING TEAM.

At a casualty clearing station, where at times wounded may be admitted in great numbers, team work, particularly when serious cranial procedures are to be covered, is of prime consideration. At best most of the more critical operations deservedly require upward of a two-hour period; and as one team, eliminating all delays, can hardly expect to do many more than eight major cases a day, the greatest possible economy of time must be practised.

Each team should be provided with an extra wooden table, indeed, if there is sufficient space, with two extra tables or trestles to support the stretchers. In this way a series of cases can be continually fed in, and the patients be more or less under the surgeon's eye while the neurological examination, the *x*-ray exposures, the shaving of the scalp, the giving of the primary drug and the novocainization of the field, all of which is time-consuming, can be carried out, and the next patient be ready to supplant the preceding without the usual loss of time between operations. An extra table is almost as valuable to a team as an extra medical officer.

2. THE NEUROLOGICAL EXAMINATION AND THE X RAY.

It is generally conceded by the majority of those who have written on the subject that serious cranial operations should not be undertaken without a preliminary neurological study. It unhappily is not universally

taken by themselves. Abadie's statistics (*Presse Médicale*, September 25th, 1916, p. 421) for 102 cases with opened dura gave 56 per cent. mortality. Cunéo (*Presse Médicale*, July 6 h. 1916, p. 229) estimated a mortality of 60 per cent. for cranio-cerebral wounds. Lapointe's figures (*Journ. de Chir.*, 1915, xiii, 241) for all cranial injuries treated at a forward hospital early in the war were 58.75 per cent. Sencert's figures, also from a hospital at the front (*Lyon Chirurg.*, March-April 1916, T. xiii), including the 24 deaths recorded as occurring after evacuation, are in the neighbourhood of 63.5 per cent.

It would be desirable if we could all come to record our cases from the same standard, whether from a forward or base hospital, and as a temporary basis for comparison, it may be suggested that all cases of dural penetration, regardless of complicating factors, be included in future reports. Only by the establishment of some accepted standard will it be possible to compare the efficacy of operative methods advocated by different individuals, or for one individual to appreciate an improvement in his own results as he gains experience.

observed. Without such an examination and the careful recording of the positive neurological findings, an operator can never be sure whether the paralyses which are subsequently observed were pre-existent, or were due to or increased by his surgical manipulations. Certainly any immediate post-operative increase in pre-existing symptoms, whether in the sphere of speech, vision, motion or sensation, should be regarded as an evidence of faulty technique. Moreover, if pre-existing palsies, the presence and grade of which, except in the profoundly unconscious cases, can easily be determined, fail to subside with considerable rapidity, the fact can be interpreted as an evidence of an incomplete operation, and complications may be anticipated. Furthermore, the question of justifiable opening of an intact dura in the course of an operation, or the need of a secondary operation for symptoms of a presumptive abscess may depend entirely upon the original neurological symptoms and their post-operative increase or subsidence.

FIG. 5.—A typical tripod incision (after five days) for p netrating wound in the mid-occipital region To show character of wound healing when flaps are held by buried Galen sutures and superficial sutures are removed early.

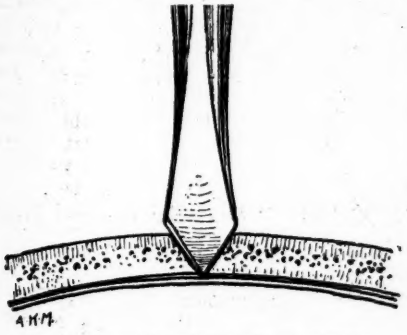

FIG. 6.—Cranial perforator (seven-eighths natural size).

Stereoscopic radiograms are of course invaluable, not only for the localization of a penetrating missile, but for the detection and enumeration of all indriven bone fragments.

3. THE PREPARATION OF THE SCALP.

The entire scalp should be shaved—no easy task when an uncropped head of hair has become caked with blood and mud. A close hair-cut before going into battle, and the application of a warm soap poultice at a field ambulance would not only help toward preventing infection but would also make the preparation for these operations a less arduous matter. The partial shaving so commonly employed is undesirable, for one can rarely tell beforehand how extensive may have to be the incisions necessary for closure.

Shaving of the scalp is an art and requires a good barber, but it is indispensable to a proper preparation of the field. The preliminary use of clippers is to be avoided, for they leave the scalp covered with short hairs difficult to remove. As a final step the mere sponging with alcohol and a mercuric bichloride solution is preferred to any of the staining solutions such as iodine or picric acid, which are apt to leave the epithelium scaly or encrusted.

4. THE ANAESTHETIC.

During the shaving of the head, possibly an hour before the patient's turn will come, a sedative is given, a third of a grain of omnopon usually being sufficient, though this may be repeated if the patient is very restless or obstreperous. Then fifteen or twenty minutes before the operation, in the lines of proposed incision, the scalp is infiltrated with a 1 per cent. novocain and adrenalin (15 drops to 30 c.cm.) solution, injected in the sub-aponeurotic layer.

There exists a difference of opinion regarding the relative merits of a general *versus* local anaesthesia for cranial operations. The writer confesses to an original prejudice in favour of inhalation narcosis, but experience has led him completely to alter this view.

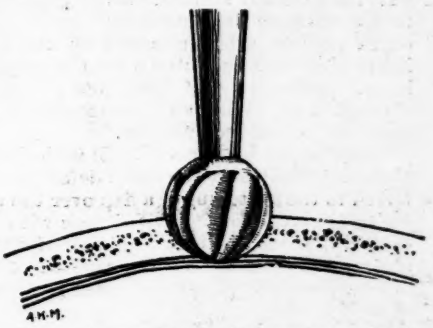

FIG. 7.—Burr to follow perforator (seven-eighths natural size).

General narcosis increases intracranial tension, which exaggerates the difficulties of an operation already difficult enough. It increases bleeding from the scalp, which, with the adrenalin-novocain solution, is rendered negligible. It encourages the use of rougher methods, which a patient under local anaesthesia would not tolerate, and which therefore are in all likelihood harmful. It encourages speed, which is to be decried if employed at the expense of delicacy. It leaves many patients, particularly those with threatened respiratory difficulties, in a condition in which inhalation troubles are prone to occur.

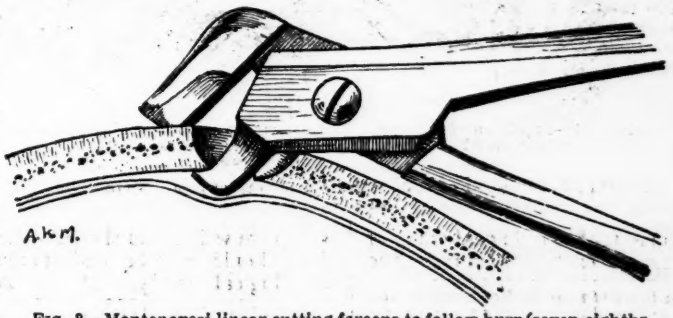

FIG. 8.—Montenovesi linear cutting forceps to follow burr (seven-eighths natural size).

Until recovery from a general anaesthetic is complete every patient should be under close observation, and this, at a casualty clearing station at least, is an impossibility. It is very rare, and then only in the case of semi-conscious patients or those with restless irritability, that the operation cannot be carried through under local anaesthesia, though this necessitates more gentle manipulations than

those usually employed, particularly during the process of removing the area of cranial involvement.

5. The Plotting of the Incision.

Many procedures have been advocated. They necessarily vary greatly, according to the likes and practices of different surgeons, and for different wounds in different areas. As in plastic operations elsewhere, success in closing defects is the offspring of ingenuity and experience.

Flap incisions, which leave the wound in the centre of the flap, are suitable for some of the penetrating wounds through muscle in temporal or suboccipital regions (Figs. 1 and 2) but for ragged or gutter defects over the vault what may be described as a "tripod" (Fig. 3), or for more extensive defects a "three-legged" (Isle of Man) incision (Fig. 4) has come to be the preferential one in the writer's hands.

When the three flaps are reflected, ample exposure of the field necessary for the trepanation is afforded, and if the flaps have been sufficiently undermined in the subaponeurotic layer the corners may usually be brought together without undue tension. It is the writer's custom to bring the edges of the galea together by a layer of buried fine black silk sutures, so that the external sutures used to approximate the cutaneous edges may be safely removed on the second day. The heavy silkworm-gut sutures usually employed in a single layer, particularly if tied under tension, rapidly cut through and make an uncomfortable wound, an ugly scar, and encourage infection.

These tripod incisions (Fig. 5) with the focal point of the closure directly over the dural defect, have come to be preferred to the switching of a flap over the centre of the field, owing to certain trying experiences with an infected hernia cerebri in cases in which the track of the missile has been incompletely cleansed. The surface of such a fungus is much more difficult to treat when partly overlain by a flap than if it were allowed to present in the centre of radiating incisions.

6. The Trepanation en Bloc.

The method usually advocated is to make with a trephine an opening to one side of the depressed area, and with rongeurs to nibble away fragments of bone until an opening of sufficient size is secured. Even with rongeurs of the best pattern this necessarily means not only working across an infected field, but the jar of breaking out the fragments with the ordinary forceps entails an amount of trauma which is more than a patient not under a general anaesthetic will tolerate. Moreover, there are certain areas of the skull where even the most expert runs a risk of cutting the dura when using a trephine.

A far more simple and satisfactory procedure is to encircle the area of depressed bone with a number of small punctures made with a perforator and burr* (Figs. 6 and 7), and then to connect these small primary openings with a linear cut, thus excising the soiled area of depressed fracture in the bone, just as the soiled scalp wound is excised. The linear cut may be made with the instruments designed by De Vilbiss or Dahlgren, but a far more effective tool for the purpose is the Montenovesi cranial forceps (Fig. 8). This instrument, when of proper pattern, inflicts far less jar, its beak can be inserted through a smaller hole, and with it a corner can be more easily turned. When the area has been encircled, the bone disc is tilted out in one piece (Fig. 9).

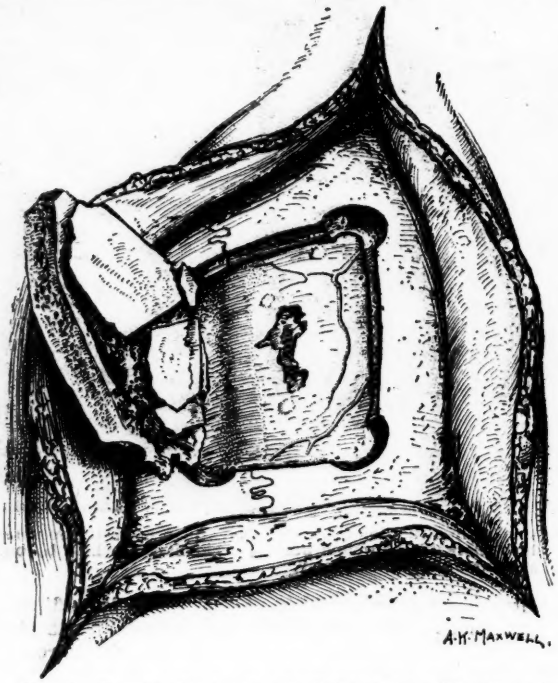

FIG. 9.—Showing the turning back from the mid vertex of an area of depressed fracture (actual specimen), disclosing a dural laceration with tear to the margin of the sinus.

The depressed fractures thus disclosed are of two main types: (1) With the fragments still adherent (Figs. 9 and 10), or (2) with the fragments completely detached and "showered" to a greater or less depth into the brain (Fig. 11). The preservation of the mosaic of fragments in the first type is often a matter of importance, for when incomplete it is evident that one or more fragments are indriven and must be secured before the operation can be regarded as complete.

Particularly when working over a sinus is this method of bone removal to be favoured, for if the sinus happens to be torn by a bony spicule, as it so often is, the withdrawal of this particular spicule before complete exposure of the area may provoke haemorrhage which may be very difficult to control. On the other hand, with the entire field exposed by the careful tilting outward of the entire block in one piece (Fig. 9), the bleeding point is fully bared, and can be quickly and easily sealed, preferably by a muscle graft.

7. The Treatment of the Track.

In penetrating cases the proper and thorough cleansing of the track is the most important step of the operation.

In the earlier cases in the series it was the custom to enlarge the dural opening by cutting away its torn and ragged margin. This has since been abandoned, for it is a procedure which often causes troublesome bleeding from the unavoidable fresh division of the vessels in the torn pia arachnoid, for the two membranes quickly adhere after the injury, a matter of hours rather than days, as is often stated. Even though bleeding from these vessels can be readily checked by the placement of "silver clips" (Fig. 12), it has been found unnecessary to practise routine removal of the dural margin, for it does not appear to be a source of infection which need be seriously feared.

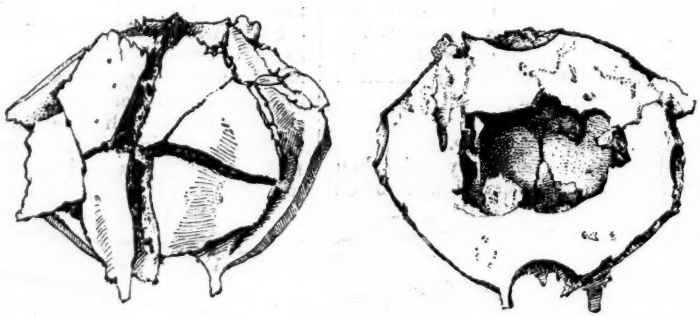

FIG. 10.—Specimen of depressed fracture removed *en bloc*, showing adherent fragments with mosaic complete (natural size).

Much more serious is the retention of the disorganized and devitalized cone or cylinder (Fig. 13) of cerebral tissue which lines the track, and in which the indriven bone fragments are embedded. Though extraction of these fragments is advocated, no special emphasis has been laid on the desirability of thorough removal of the pulped tissue which surrounds the pathway of the missiles, and which, like devitalized tissue of any kind, is a soil favourable to the growth of organisms.

As Colonel Gray has suggested, if the patient is encouraged to cough, clots and cerebral débris oftentimes

* These instruments are almost as ancient as the trephine. Though commonly ascribed to the late Dr. Doyen, the brace and bit and various forms of burr were fully pictured by Barengar in the sixteenth century.

may thus be expressed, and some have employed gentle curettage or irrigation; but if a finger is introduced in the track for purposes of exploration, the disorganized and soiled cerebral tissue lining its walls will be crowded inward, whereas every effort should be made to get it out.

Almost from the outset reliance was placed on the use of a flexible, soft-rubber catheter as a means of determining the exact direction taken by the missiles, whether a metallic body, or bone fragments, or both (Fig. 13). Without the production of additional trauma one may investigate in this way even the narrowest track, and it will be found that the presence and situation of any indriven bone fragments can be detected with almost as great delicacy as by direct palpation.

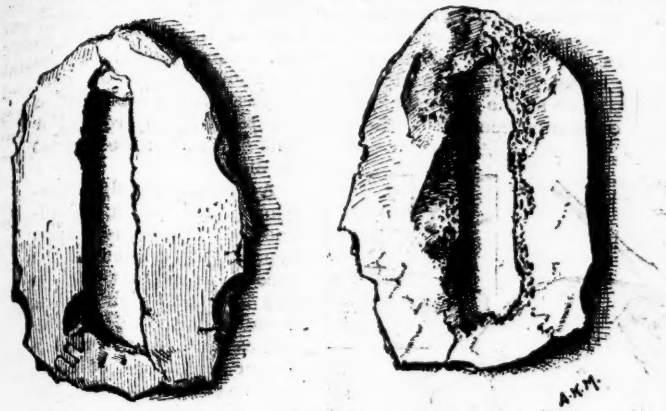

FIG. 11.—Specimen of cranial gutter wound removed *en bloc*. No fragments adherent, all having been detached and driven into brain.

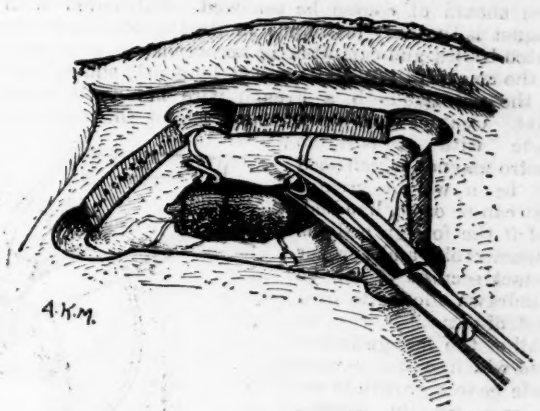

FIG. 12.—Showing the method of placing silver clips on the vessels of dural or meningeal margin.

By attaching to the end of the catheter a Carrel-Gentile glass syringe with its rubber bulb (Fig. 14) it is possible to suck up into its lumen the softened brain, which can then be expelled from the catheter as paste is expressed from the orifice of a tube. The process should be repeated until the cavity is rendered as free as possible of all the softened and infiltrated brain. It will be found that the adjoining normal cerebral tissue, unaffected by the original contusion, will not be drawn into the tube by the degree of suction which can be applied by the average rubber bulb.

Not infrequently bits of bone come away in the eye of the catheter, and on one or two occasions a small foreign body has thus been withdrawn. Meanwhile, as the track becomes clean and the tension and tendency of the brain to herniate subsides, it is possible with delicate duck-billed forceps to pick out from the track one by one the bone fragments, whose depth and position can be determined by the unmistakable sensation they impart to the catheter, which thus supplements the information given by the *x*-ray plates. The technique of the performance will quickly be acquired by any one who may wish to put it into practice.*

FIG. 13.—Diagram to show the insertion of a catheter in the track of a penetrating missile.

Any procedure is capable of being abused, and even a soft flexible catheter may possibly be forced to do damage. Even those who advocate digital exploration admit that damage may be done thereby unless the greatest care is exercised, but we must recognize that the surgical profession contains its Little Jack Horners, and it is better, on the whole, for all of us to keep our fingers out of the brain so far as possible.

8. PURPOSEFUL INCISION OF THE DURA.

This procedure, in the case of the usual subtemporal decompression through an intact scalp, need not concern us, but when performed in the area of a dirty wound it is a different matter. Under these circumstances it must be undertaken with great hesitation, and only in those cases in which the neurological symptoms indicate a serious local loss of function, or in which the exposed and undamaged dura is tense and evidently overlies a clot or severely contused area.

If the dura is opened under these conditions, if the disorganized area is washed and sucked away until normal tension is restored, and if the membrane is then accurately closed with delicate fine black silk sutures passed on curved French needles, there is practically no risk of infection. Needles with cutting edges and heavy suture material are unsuited to this delicate procedure.

There can be no doubt but that the period of convalescence and its attendant discomforts in this particular group of cases can be greatly lessened by opening the dura, but if the surgeon has any doubts of his technique or of the cleanliness of the wound, he had far better give the patient the chance of recovery afforded without incising the membrane.

9. RETAINED MISSILES.

It goes without saying that it would be the ideal treatment, at a primary operation for a penetrating wound, if the foreign body could always be removed. Otherwise the operation must be regarded as incomplete, with a far greater likelihood of subsequent abscess formation than if removal of the missile has been accomplished. It is equally true that foreign body extraction, no matter how desirable as a means of avoiding these possible secondary complications, should never be forced to the point of increasing the damage to the nervous tissues already done by the penetration. Some say "avoid infection at any cost"; others "better a fatality from infection than the certainty of perpetuating paralyses." Between these two schools one must decide in the individual case.

It is well known that many, even sizable bodies—a shrapnel ball, for example—may be retained without provoking symptoms, but even so, the writer has known of

* In not a few cases in the series the missile and bone fragments have been driven through into the ventricle, and in the process of suction the cerebro-spinal fluid spaces have been sucked completely dry. These ventricular penetrations have been met with in twenty-five cases, and it is by no means as desperate a condition as is generally supposed. Many cases with opened ventricle, when treated in this way, have made perfect recoveries, as will be related in a more detailed communication which will permit of case reports.

abscess formation around such a missile first giving evidence of itself a year after the injury. The middle ground position is the safest one—namely, always to extract a foreign body if it can be accomplished without increasing the damage already done.

This discussion applies solely to deeply implanted missiles, for all agree that superficial and easily accessible ones should of course be removed. Extraction with a magnet is the only justifiable method applicable to deep-seated bodies and can often be accomplished after suction of the track in the usual method by gently sliding into it, to the proper depth, a French wire nail with rounded point. Contact with the proximal end of the nail is then made with a portable electro-magnet, which need not be a weight greater than can be easily handled, and if the foreign body is magnetizable and proper contact secured it will be withdrawn along its own track of entry.*

All of the foreign bodies from which cultures were made gave a growth of organisms—usually streptococcus, staphylococcus, or some gas-producing bacillus.

10. The Use of Antiseptics.

The use of watery solutions of antiseptics in the brain is disappointing, for they lead to oedema with swelling of the tissue and an increased tendency to herniate. It was not until Dakin's dichloramine-T in eucalyptus oil came to be utilized as a routine during the latter weeks of our service that there was a notable diminution in the number of infections.

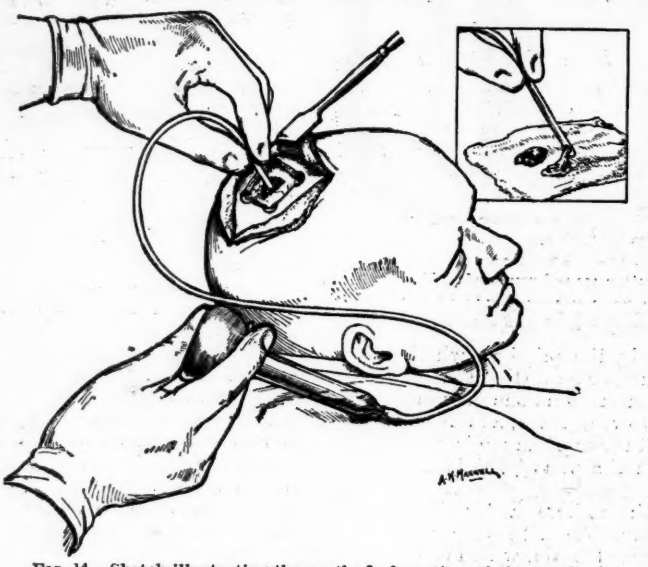

FIG. 14.—Sketch illustrating the method of suction of the track of a penetrating wound.

It is true that the technique of the procedures had greatly improved at this time, and true also that we can record no thoroughly conclusive bacteriological studies, though cultures of many of the wounds and foreign bodies were made. With the dichloramine-T, in not a few cases in which an infected foreign body was removed and in which bone fragments as well gave an abundant growth, no symptoms whatsoever followed closure of the wound without drainage. In two instances the cultures showed the presence of the pneumococcus in the ventricular fluid, and the only patients in the series who have recovered from active gas infection of the brain were treated with this drug.

As the terminal step of cleaning out the contused pathway of the missile a small amount of the oily solution is injected along the course of the track through a small catheter, and, just before final closure of the scalp, the dural surface of the wound is moistened with the same solution.

Conclusion.

This bare recital of an operative method for a certain type of the many wounds which occur in warfare makes dull reading. It is hoped that it will nevertheless carry some suggestions to others who, like the writer, without preliminary instruction, may, by force of circumstance, have to undertake similar tasks. Much admirable work directed toward the improvement of cranial operations has been done by surgeons in the allied armies—in the British Forces notably by Sargent, Gray, Anderson, Grahame, and Wagstaffe. Unfortunately, however, there have been few, if any, detailed reports of a series of cases, either from front or base, and the underlying principles of treatment of these penetrating wounds has been the source of some disagreement. A surgeon naturally becomes wedded to the particular procedure which he happens to have developed and is more likely to succeed therewith than by adopting the methods of others.

There can be little doubt but that, as is the case with thoracic, abdominal, and joint injuries, the earlier a cranial operation is performed the less likelihood there is of sepsis. The mortality, however, in a hospital near the front is, in the natural course of events, almost certain to be greater than the mortality of operations for similar conditions at the base, for delay always serves to eliminate a certain percentage of the more desperately injured. For this all allowances must be made.

A distinguished surgeon once seriously advocated operating upon typhoid perforation in the second rather than in the first forty-eight hours, because the collected statistics had shown that a larger percentage of cases operated upon in the second forty-eight hours recovered. In the difficult task of dealing honestly with statistics fallacies of this kind at least can be avoided.

Acknowledgements.

There are many obligations to acknowledge—to General Bruce Skinner, to Lieut.-Colonel C. I. Ellis, to Captain F. A. Roper for his helpful *x*-ray studies, to Captain Archibald Leitch for his many bacteriological observations, and to those who from time to time were assistant members of the surgical team on whose shoulders fell the larger part of the work.

* The extraction was successful in eleven cases in the series in which the missiles would otherwise have been inaccessible. It would have been preferable to place the interposed nail in exact contact with the foreign body under the direction of a fluoroscope, but our situation did not permit of this. The procedure is capable of great development, and next to the eye the brain is the most favourable place for employing the magnet.

NOTE ON THE EXTRACTION OF A FOREIGN BODY FROM THE BRAIN.

BY

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THE damage necessarily done to the brain structure in the removal of a foreign body, coupled with the fact that experience has shown that fragments lodged in the brain may give rise to very little disability, argues for leaving deep-seated ones in position until such time as it becomes evident that their presence is the cause of the symptoms and that removal, if it can be effected, will lead to an improvement in the patient's condition. The following is a report of a case in which the attempt to remove a foreign body from the brain was considered to be indicated and was justified by the result.

History of the Case.

T. K., a man aged 20, was wounded on February 7th, 1917. The note from the casualty clearing station was: "Several small wounds in neck and back of head. Semi-conscious and suffering from shock. Vomited on the way down to the casualty clearing station. *X*-ray report stated that there is a small foreign body in the brain and that there is some damage to the occipital bone." He was kept in the casualty clearing station and base hospital in France for seven weeks and improved considerably; he was then transferred to England. On admission to the 2nd Western General Hospital his condition was poor; there was marked mental dullness, slowness and hesitancy of thought and speech, and he was somewhat childish mentally. He could not sit up for more than a few

minutes and suffered from intense headaches. He seemed to have some difficulty in opening his eyes and in bringing his mind to bear on anything. The tendon reflexes were all increased in the left arm, and there was definite weakness of the left arm and leg. There was slightly increased knee-jerk and very marked ankle clonus. The signs and symptoms all suggested a subcortical lesion in the right Rolandic area, and the *x*-ray examination confirmed this view, a foreign body being located in the suspected region. For three months he was kept under observation and symptoms became more marked. Any effort was followed by marked clonic spasms, and he was quite unable to sit up. He complained of a burning pain over the right side of the head.

The patient knew that he was getting worse both mentally and physically; he was therefore transferred to the Manchester Royal Infirmary for investigation and consideration as to the possibility of operative interference. He was again *x* rayed and the foreign body was localized as 2 in. deep from the scalp beneath the Rolandic area of the right side; the damage in the occipital region was no

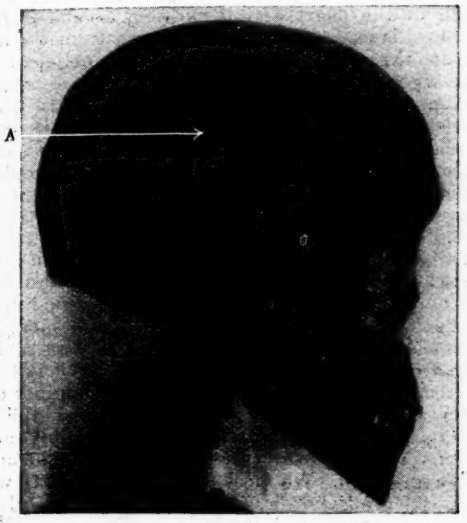

FIG. 1.—Radiogram showing position of foreign body, A.

longer noted in the *x*-ray plates. In view of the fact that the patient had steadily become worse since admission, it was decided to attempt the removal by means of a special instrument described by one of us (A. E. B.) before the Electro-therapeutic Section of the Royal Society of Medicine.[1]

The Operation.

On June 26th, 1917, the foreign body was relocalized as 2 in. deep and a skin mark was made on the right parietal region just before the operation in the theatre (by H. H. R.). The position of the skin mark corresponded to a point about half an inch behind the lower third of the fissure of Rolando. The fragment was small, but it could be seen on the screen fairly well. The patient was then anaesthetized. The bone was marked through the skin mark by a fine drill and then the flap was reflected. A one inch trephine was then used, taking the bone mark as the centre, and the opening enlarged slightly above and below. In order to assist in the repositioning of the patient on the *x*-ray couch, small screws were put into the skull on either side of the opening.

The patient was then taken to the *x*-ray department and the head placed in exactly the position in which the skin mark had been made, the shadow of the foreign body falling midway between those of the two small screws. A small horizontal incision, three-quarters of an inch long, was then made in the dura, and the point of the extractor placed in position (by A. E. B.). With the lights out, the extractor was then manipulated so that the shadows of the fragment and of the points of the extractor fell exactly in the middle of the small fluorescent screen attached to the instrument. With the lights up, the point of the extractor was allowed to descend almost to the depth of the fragment (2 inches), a small band of rubber tube having been placed on one of the blades to mark this distance. Then, with lights off, the blades were gently opened to see that the shadows of the fragment and the extractor points still corresponded to the centre of the fluorescent screen. Seeing that the direction was correct, the blades were allowed to descend to the full length, and very gently moved about to "feel" the foreign body. Almost at once the bell attached to the instrument gave a slight ring, showing that the metal had made contact across the blade points, and that by raising the points very slightly, then opening sufficiently and descending, the fragment should come in between the jaws of the extractor. This manipulation was carried out, and the shadow was again seen between the blades. On closing the blades the bell at once rang continuously, showing that the fragment had been caught. With the lights on, the instrument was gently withdrawn, and in the middle of the clot of blood that came away was the small foreign body.

The patient was then taken back to the operating theatre, where the incision in the dura was brought together and the opening in the skull closed by replacing the piece of bone.

A small quantity of clear cerebro-spinal fluid came away when the extractor was inserted to its full depth, suggesting that the fragment lay in the lateral ventricle, and this was again suggested on examination of the fragment; it was partially covered by a deposit of what appeared to be lime salts.

From measurements of the skull, the foreign body lay slightly over half an inch from the mid-sagittal plane.

In the *x*-ray department it took perhaps five or ten minutes to reposition the head accurately; the extraction of the fragment occupied about three minutes. The slight extent of the disturbance to the brain may be judged by the fact that there was no paralysis, even on the following day.

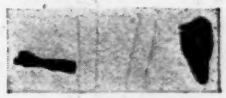

FIG. 2.—Radiogram showing actual size of foreign body.

After-History.

The shock of the operation was not as severe as expected, and even on the following day he could move both the hand and foot fairly well. There was no paralysis of any part and within a week the power of the grip was as good as before the operation. Recovery of power continued, and the mental condition became very much clearer; it was evidently less effort to think, and the patient himself stated that he felt that he was getting better. He was able to sit up in bed without any ill effect, and the clonic tremors were less frequent and not so easily brought on. The wound healed rapidly, and the trephine disc united to surrounding bone firmly. A few weeks after operation he was able to stand and walk a few yards with assistance. On August 30th, 1917, he was transferred to Dr. Macmillan at Moorlands Red Cross Hospital, but the journey in the ambulance seemed to cause a setback for a time. Attempts to stand brought on the clonic spasms, which were also induced even in bed by slight causes. The grip was less strong, and there was very slight paresis of the facial muscles. Improvement has gradually taken place, and he is now very much in the condition he was in before he was transferred except that the mental condition is now much sharper, and there is less hesitancy in speech and thought. There is no trace of facial paresis, the grip is fairly strong, and he can walk about the room with assistance. He is evidently recovering quite satisfactorily though slowly.

The Extractor.

The extractor is made like a pair of dental forceps, the jaws being about 1½ in. apart when closed. Above the jaws is fitted a small fluorescent screen. Beaks or blades are fixed at right angles to the jaws and meet at the points, but are insulated from one another by a small fibre block let into one of the blades, which is made slightly longer than the other (see Fig. 4). For brain work the blades are thin and close together, the point of the longer blade being rounded. For the removal of foreign bodies from ordinary tissues stronger blades are used, the point being fashioned like a blunt dissector so that the instrument can dissect, and, by opening the blades, separate its own way down after the skin incision has been made. The blades are connected with an electric bell through a relay that is specially fitted in order to avoid stimulation of structures

when contact is made. When the blades are brought into the correct relationship with the foreign body—that is, with the longer blade alongside and the shorter blade

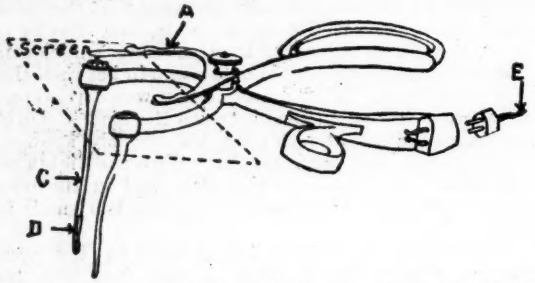

Fig. 3.—Diagrammatic view of the instrument. A, Screen holder and contact of the insulated blade; C, insulated blade; D, block of fibre on insulated blade; E, connexion bell circuit.

touching the top of the fragment—contact is made and the bell rings. This indicates that by raising very slightly and opening the blades the foreign body can be picked up without any intervening structures being also caught.

Protection, additional to that of the diaphragm, tube, box, etc., is afforded by a sheet of heavy *x*-ray proof rubber with a 3-in. hole in it that is placed either above or below the patient.

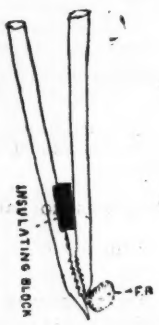

Fig. 4.—Large view of the points of the blades of the extractor, showing how contact is made by foreign body across the points.

The use of this instrument is not easy; like other surgical instruments, it requires practice. It also requires experience in the interpretation of *x*-ray shadows. When the foreign body can be seen, it looks so simple to pick it up with the points of the extractor, which can also be seen in the fluorescent screen. And it is simple, provided that the operator recognizes that it is absolutely essential to make an *exact start* directly over the foreign body and move the points of the extractor *exactly* in the line of the rays—that is, straight to the foreign body, correcting his direction as he proceeds towards it.

Only certain cases are suitable—that is, those in which access can be had to the foreign body directly in the line of the rays, and through soft structures, or with the assistance of a trephine, as in this case. Old-standing aseptic cases, surrounded by a fibrous capsule, are not suitable for extraction.

It is not an instrument for anyone to use—it involves exposure to *x* rays, and must be used by or in co-operation with a competent radiologist, who is experienced in radio-therapeutics, and who knows where the danger zone from *x*-ray dermatitis begins, and how to protect not only the patient but also the operator.

Reference.

[1] *Proc. Roy. Soc. Med.*, 1916, vol. ix (Electro-therapeutic Section), pp. 75-89; and 1917, vol. x, p. 103.

ON THE INFLUENCE OF MUSCULAR EXERCISE ON LONGEVITY.

BY

Sir HERMAN WEBER, M.D., F.R.C.P.

To promote longevity all the systems and organs of the body ought to be kept in a healthy condition, and prevented from decaying as long as possible. We must not attend to one of them alone, but to each and all of them, must endeavour to keep them all sound and vigorous, make them assist one another, and work together in harmony.

In the present paper I intend to show the principal features of the influence of the muscular system on the functions of the other systems and on the life of the whole organism.

The contraction of the muscle, as shown by Professor Ludwig, Sir Lauder Brunton, and Dr. Oliver of Harrogate, causes dilatation of the arterioles, capillaries, and lymph spaces, allowing more oxygenized blood to flow to the muscular fibres, which abstract from it what they require for their nutrition and let the remainder, together with the used-up material, pass partly into the veins, partly into the lymph spaces and the lymphatic vessels. By this process the muscle is nourished, the products of decomposition are removed, metabolism is promoted, and heat is produced. In addition, the small blood vessels, through their increased action, are kept in a healthy condition. We may go further and say that the spheres of the brain which initiate the contractions of the different sets of muscles, are likewise favourably influenced, for an increased flow of blood is attracted to them by their work and the blood vessels are forced into greater activity, by which their own coats as well as the brain substance are nourished.

Walking Exercise.

The most natural of all muscular exercises, as pointed out by Hippocrates, is walking exercise. A great part of all the muscles of the body is activated by it; the action of the heart and respiratory organs is increased; the blood is passed with greater force from the heart into the blood vessels of the body, which are obliged to contract more vigorously, carry more blood to the different organs of the body, nourish the latter, and are themselves nourished through their work. By the contraction of the muscles of the legs more blood is attracted to them, and is squeezed out from them into the veins and lymphatics and carried to the heart, which is forced to contract more vigorously. The pumping action of the heart thus induced strongly assists the circulation of the blood and lymph in the abdominal organs, and is helped in this by the more powerful contraction of the diaphragm and abdominal walls which accompany the increased respiratory movements forced on by the more rapid and more energetic contractions of the heart. The more powerful breathing leads to improved oxygenation of the blood and increased metabolism. All the organs in the abdominal cavity are favourably influenced by active walking; the appetite, the digestion, and assimilation are remarkably improved.

Thus walking exercises a favourable influence on the whole organism. We must therefore take daily walks and, if possible, in the open country, and do so in all weathers. The amount of walking required by different persons varies according to personal conditions and the manner of living; we may say between half an hour and two or three hours. It depends not only on the constitution of a person, but also to a great degree on the varying state of health and strength, on habit, on occupation, on the meteorological conditions—heat or cold, dryness or humidity, strong or light wind, or stagnation of air.

The walk ought not to be extended to actual fatigue, but ought to lead to exhilaration and agreeable warming of the whole body. The pace of walking, too, must vary in different persons, from less than a mile to three and four miles an hour, according to the condition of the walker and to habit, and ought not to be changed all at once from an accustomed slow to an unaccustomed very rapid pace.

With increasing age the power and the inclination to walk diminish, and this coincides with the diminution of the creation of warmth. Friar Roger Bacon, in the thirteenth century, stated that the body heat decreases after the age of 40. His statement agrees with the experience of many others as well as myself, though the exact age varies in different persons according to their general condition, their manner of living, and especially their activity. To prevent this decrease of heat production persons advancing in years must continue to walk or take other muscular exercises as much and as long as they can, and must not allow their friends to dissuade them from doing so, or yield to their own inclination to give it up. Even if it rains or snows, or the weather is otherwise disagreeable, they must continue to take their accustomed exercise; since, if they neglect it, and stay at home engaged in reading or some other occupation, they have great difficulty in resuming the necessary exercise. Great is in this respect the difference between the young and the old; the former can easily return to active muscular work after long rest, not so the latter. They must not regard their number of years but their physical capacity. If those advanced in years neglect muscular exercise their muscles waste, their metabolism fails, their body heat

diminishes, and their path to premature senile decrepitude is rapidly paved. On the other hand, it is to the majority of people almost incredible how much can be done by energy and will power to postpone this decay.

A matter which is not sufficiently considered is the mode of walking. A walk of three or four miles with half-bent knees and back is not as useful as one of the same length with firmly contracted muscles of the legs and thoroughly erect spine.

Persons with a sound circulation derive more benefit from walking uphill than from walking on level ground. Even to those with slight dilatation of the heart gentle ascents at a slow pace are very useful.

The benefit of walking is much enhanced by taking once or twice a week a longer walk in the country, and infinitely more so by walking tours of some weeks in mountainous or hilly regions. Marvellous is the improvement effected by them in the physical and mental condition. Old people need not be quite debarred from the benefit of such tours; they ought not to climb high mountains and glacier passes, but with judicious limits they can, with great benefit to themselves, do much more than is generally admitted.

Many other forms of muscular work can be advantageously substituted for walking, such as riding on horseback, hunting, shooting, cricket, football, golf, fishing, etc., some of which not only benefit the body, but also the mind and the character.

By walking we employ principally the muscles of the legs and the spine; we must also put into action those of the arms and the thorax. Those of the thorax we exercise through deep inspirations and expirations, which we effect by the contractions of the intercostal muscles and the diaphragm. In so doing we massage the ribs, expand the thorax and the lungs, keep up their elasticity, powerfully influence the contractions of the heart, and compress the organs in the abdominal cavity. By the massage of the ribs we keep them in a healthy condition, the bone substance as well as the marrow, with its blood-forming function.

With the respiratory movements we ought to combine exercises of the arms in various ways, extending them, for instance, vigorously with a deep inspiration, contracting them with a full expiration; raising them perpendicularly with deep inspirations, so as to allow the air to pass freely into the apices, which, with shallow breathing, are often insufficiently expanded, and are apt to become seats of disease. The habit of shallow breathing ought to be entirely avoided, and that of full breathing, which can and ought to be substituted for it, can and ought to be acquired by every one.

The effect of these arm gymnastics is, however, not restricted to the muscles of the arms alone, but extends to those brain centres which initiate their movements. As soon as they become active, an increased amount of blood rushes to them, the small blood vessels are forced to work, and the work keeps both the blood vessels and the brain substance in a healthy condition.

The muscles of the trunk we put into action by moving the trunk upwards and downwards with deep inspirations and full expirations; or by turning the body in the erect position as much as possible around its axis, with deep inspiration from the left side to the right, and with full expiration from the right to the left. There are many other methods of exercising the different sets of the muscles of the trunk.

All the muscular actions of the body have a certain action on the bones. Each contraction of a muscle causes a pull on the bone to which it is attached; this pull acts as a kind of massage on the periosteum, the bone substance, and the bone marrow. The nutrition of the different parts of the bones is through this process maintained; the well-known brittleness of the bones in old age is prevented, the bone marrow is kept healthy, and by improving the composition of the blood increases its power to combat hostile bacilli, and thus prevent disease.

After this short discussion of the muscular actions on different parts of the body, I venture to point out the following effects:

1. Increased afflux of blood to the muscle with each contraction.
2. Increased nutrition of the muscle, combined with improved metabolism and production of body heat.
3. Increase of exchange of fluid between blood and tissues.
4. Facilitation of the removal of waste products.
5. Preservation of the elasticity of the thorax and lungs.
6. Abundant supply of oxygen for the blood and the metabolism.
7. Maintenance of a healthy condition of the organs of circulation, from the heart to the smallest arteries, capillaries, and lymphatics.
8. Massage of the bones, keeping up the healthy condition of the bone substance and the bone marrow, and through this the formation of a sufficiency of blood efficient for the fight with hostile bacteria entering the blood.
9. Increase of the resisting power of the body against disease.
10. Persistence of the working capacity of the brain centres, which initiate the action of the different sets of muscles.

I add to this short paper a personal note regarding my view of the influence which muscular exercise has had on my longevity. I do this in the hope that some of my professional brethren may accept this view, and may induce their friends and patients to act on it in order to prolong their lives. I take no gloomy view of the conditions of old age, but think it a privilege to obtain a long life. It has not, I concede, all the pleasures, nor the powers—mental and physical—nor the imagination of youth; but it need not be helpless, useless, cheerless, and friendless if the aged person endeavours to be in harmony with the aims of the younger generations; and happily the mental faculties, especially intelligence, often survive the physical powers for many years, and enable the aged sometimes to give useful advice to his younger friends.

Although I know that it is not the exercise of the muscular system alone to which I owe the satisfactory condition of health and strength which I retain in my 95th year, but that the attention to hygienic conditions in general, to the digestive functions, to the mental work, and the tenor of the mind as I have explained in my little book on *Prolongation of Life*, has a great share in it, yet I am sure that the keeping up of the muscular system has played a prominent part in it, and does so still. The facts of my spending daily two to three hours in the open air, walking, as a rule, thirty, more frequently forty or fifty, miles a week and enjoying the beauties of nature, have not only an exhilarating effect on my mind, but keep up the whole organism and the resisting power to a considerable degree for my age. The possibility of heredity might be suggested, but this suggestion will probably be discarded, when I state that both my parents died in the 60th year—my father from cerebral apoplexy (a frequent cause of death amongst his forefathers), my mother from inherited weakness of the heart, leading to frequent bronchial attacks, anasarca and effusion into the pleural cavities. One might rather say that I had inherited a tendency not to long life, but to these life-shortening morbid conditions. If so I have been able to counteract them by energetic fighting against them from an early period of life.

LITERATURE.

Bacon, Roger: The Cure of Old Age, London, 1683. (*De prolongatione vitae.*)
Brunton, Sir Lauder: An Address on Longevity and the Means of obtaining it, *Lancet*, November, 1906.
Oliver, Dr. G.: *Recent Studies on Blood and Blood Pressure*, 2nd ed., London, 1908.
Weber, Sir Herman: *On Means for the Prolongation of Life*, 4th ed., John Bale and Sons, 1914.

THIGH STUMP EXTENSION SPLINT.

BY
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TEMPORARY ASSISTANT SURGEON TO ST. GEORGE'S HOSPITAL
SURGEON TO CITY OF LONDON MILITARY HOSPITAL.

THE stumps following flapless or flush amputations of the thigh that have come under my notice after transport from the seat of war have all apparently suffered from having been unprovided during their treatment with some continuous extending force to counteract the natural tendency to retraction of the soft parts that in these cases leads to conical stump formation in a short time to a serious degree.

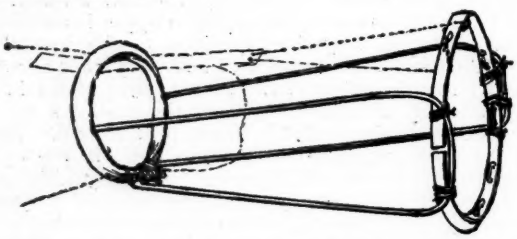
The nature of the injuries has necessitated, as a life-

saving device, the division of tissues without regard to adequate flap formation. But thereafter it becomes incumbent upon the surgeon to conserve for the patient every fraction of the stump possible. If the retraction of the soft tissues is permitted to proceed unrestrained until such time as secondary amputation is performed, it will be the general experience that an undue length of femur will require removal before the soft parts are capable of approximation, and that the ultimate shortening of the stump may prove very disappointing.

I am aware that stump extension is at times employed, but such contrivances as are usually made use of cannot, in my opinion, be relied upon to maintain the necessary continuous uniform traction during all movements of the stump and positions of the patient both in bed and during transport.

A splint that I have improvised achieves this, and after its use in numerous cases during the last two years I am able to speak of its utility. Unhappily, many of the cases that arrive in this country have reached a stage in which the tissues are fixed in retraction when counter-extension can obviously be of little use; this note is published in the hope that the splint may receive a trial in France to prevent retraction, and to afford the further advantages to the patient of freeing him from pain and of giving protection to the stump—all important factors during transport.

The splint is improvised from a Thomas splint, as modified by Jones for the arm; its ring will, as a rule, be found to slip comfortably over the thigh. One with a closely fitting ring having been selected, it is forcibly bent at the bars until the end meets the leather-covered ring, to which it is secured by a tape. A blow with a mallet will convert the ring to an oval that will, perhaps, better fit the contour of the thigh. In the rare event of the ring being too small, it may be enlarged by division with a saw close to the outer bar.



Improvised thigh stump extension splint. Note: The aluminium ring is made large when indicated by the condition of the wound, and small when direct extension is required.

A length of about twenty inches of aluminium splinting is then bent in the form of a circle, loops within, and this hoop is then inserted and secured by tape or strapping between the ends of the bent bars of the Thomas splint, which are forced apart, if necessary, to receive it. The splint is now complete, and takes but a few minutes in the making.

Extension strapping is next applied to the whole length of the stump at the points of the circumference selected as best suited for effective flap extension. The projecting ends of the strips should be folded so that their adhesive surfaces are effaced, and in each two openings are snipped for the passage of tape that is so passed as, when extension is made, to appose the lateral edges of the plaster to the skin. The coaptation of the plaster strips to the surface is further secured by a circular band of the same material round them all near the end of the stump. Efficient substitutes for adhesive strapping, and in some ways better, are strips of bandage or gauze affixed in like maner with glue.

The splint is now applied, the padded ring being carefully insinuated upwards until it gets a firm bearing against the tuberosity of the ischium. Being close fitting it gives additional security against slipping of the extension strips.

Extension is now made by drawing upon the tapes or strips and securing them by adequate tension in the direction of their application to their corresponding segment of the aluminium ring by slip-knots, daily attention to which will ensure that a uniform tension is maintained conforming with the give of the soft parts.

The splint is light, and forms a frame that supports and moves with all movements of the stump, the flaps of which are held in fixed extension, while the splint is self-secured by means of its extension bands. Extension is maintained whatever the position of the stump and whatever its movement, so that the position of the patient can be varied and attendance on him rendered easy. After the application of the splint the patient is freed from pain, and no cradle is necessary, as the splint affords the necessary protection. The open aluminium ring allows access for swabbing and dressing, and from the side a kidney-shaped dish can be introduced beneath the wound.

The dressings being maintained in position by the framework of the splint, no bandage is required, so that access to the wound is ready and provides for prompt attention in case of haemorrhage.

I should like particularly to recommend the use of this splint during transport. The material is available and it requires only a few minutes to be made. In October, 1915, Sir G. H. Makins showed an adaptation of a Thomas knee splint, but not of the same character as mine.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

LONG LIFE AFTER EXCISION OF RECTAL CANCER.

IT is well known that freedom from recurrence after complete removal of cancer of the intestine is more likely than in many other situations. As it is not always easy to obtain the history of a case after many years, I am much indebted to Sir William Whitla, of Belfast, for giving me the completed record of a case thirty-one years after operation. Such a case is of much interest, and affords encouragement. In 1887 I operated in Belfast upon one of Sir William's patients, assisted by Mr. (now Sir Anthony) Bowlby and Mr. Sinclair of the Belfast Royal Hospital.

The patient was a lady 53 years of age, who had had symptoms for six months. Examination under an anaesthetic showed that the disease commenced three inches above the anus, and extended upwards about four inches. It completely surrounded the bowel, producing considerable stricture. The posterior wall was more deeply invaded than the anterior. The operation was difficult and prolonged, but eventually, after freely opening the peritoneum, a complete segment of the bowel five inches in length was removed, including half an inch of sound margin both above and below the growth. Microscopic examination showed a typical specimen of adenoid cancer. The patient, under the care of Sir William Whitla and Mr. Sinclair, made a good recovery.

Five years later, owing to some contraction, an inguinal colotomy was performed (not under my advice). I saw the patient thirteen years after the operation. She was in excellent health, and there was no sign of recurrence. The colotomy opening gave hardly any trouble.

Sir William Whitla has most kindly sent me, under date February, 1918, a letter as to the sequence of the case: "I enclose a card informing you of the death of your old cancer case operated on in 1887. She has just died at the age of 84. Surely this is a record."

W. HARRISON CRIPPS,
Consulting Surgeon to St. Bartholomew's Hospital.

THE GUILLOTINE AMPUTATION.

THE number of cases in which a guillotine amputation has been performed at casualty clearing stations and base hospitals in France induces me to ask if some other method of amputating could not with safety be practised. Unfortunately I have not had an opportunity of seeing cases as they present themselves at a casualty clearing station, but I think it is equally unfortunate that so few surgeons working at the front have not had an opportunity of seeing the after-results of the guillotine method.

It may be that the fear of gas gangrene is the important factor which has caused this plan to be adopted so generally. A guillotine amputation invariably necessitates reamputation, but, apart from this, the great disadvantage is that by the time the patient arrives in England the skin has retracted so much that a large granulating and suppurating stump is exposed. The

dressings are often extremely painful, and the subsequent loss of bone, even after prolonged extension to draw the skin down, is sometimes very great.

May I suggest that in a fair proportion of cases flaps might be made and brought together by rubber button sutures, as advocated for reamputation by Major W. A. Chapple in the BRITISH MEDICAL JOURNAL of August 25th, 1917, p. 242? Ample provision for drainage is, of course, essential. I have adopted this plan in a number of reamputations with marked success, even in the presence of active suppuration.

I have been working at this hospital since August, 1914, and can recall distinctly the very unsatisfactory results obtained during the early part of the war, when amputations in France were performed in the orthodox way. At that time the flaps were made too close to the injured tissues, were stitched too closely, and adequate drainage not provided for. Now the pendulum has swung so far in the opposite direction that a few weeks after the operation, owing to skin retraction, the appearance of the stump would almost suggest that the patient had been amputated from the limb and not the limb from the patient.

If surgeons in France decide that after all it must be a guillotine amputation, I hope they will so modify it as to leave much more skin, and so dispense with many subsequent troubles, and save the ultimate length of the patient's limb.

I trust these remarks will be read in the spirit in which they are written, for I feel very proud of the excellent work being done by British surgeons at the casualty clearing stations in France, more especially in regard to abdominal injuries and wounds of joints. Why not bring amputations up to the same high level? The fact that we surgeons are all working for the same end—to learn what is true in order to do what is right—will, I trust, be a sufficient excuse for me venturing to criticize the work of others in a particular branch of surgery.

R. W. MURRAY, F.R.C.S.,
Major R.A.M.C.(T.).

1st Western General Hospital, Fazakerley, Liverpool.

SPONTANEOUS HAEMORRHAGE INTO THE PERITONEAL CAVITY IN ARTERIO-SCLEROSIS.

THE occurrence of spontaneous haemorrhage in cases of arterio-sclerosis with high blood tension is a matter of everyday experience, especially from the cerebral arteries. That such haemorrhages are not entirely confined to these arteries is also well recognized, as cases of severe epistaxis, metrorrhagia, haematemesis, and haematuria arise in the course of arterio-sclerosis. In the description of this disease in textbooks I have not found any mention of haemorrhages into the peritoneal cavity, and on this account report the following case.

Mr. T. M., aged 48, consulted me in March, 1912, complaining of transient loss of power over the lower limbs, headache, dizziness, and depression. He had hard and tortuous arteries, accentuation of second aortic sound of heart, and a blood pressure of 160 to 170 mm. In 1915 his symptoms had grown worse, and the blood pressure had increased to 180 to 190 mm. In July, 1915, he had left hemiplegia, from which he recovered. He also suffered from nasal polypi, and in September, as these were causing troublesome nasal obstruction, I removed them by snare. This operation was followed by severe haemorrhage, which was very difficult to control. In 1918 his condition was such that he found relief from his symptoms only by remaining in bed. On February 5th he remained in bed until the afternoon. He then got up, and, when taking some tea, was seized by a violent pain in the epigastrium. I saw him about an hour afterwards. He was then crying out with pain. His temperature was subnormal, and pulse 80. The abdomen was distended; the abdominal wall was rigid and board-like. There was dullness in both flanks, but no absence of liver dullness. I advised immediate operation.

Operation.—On opening the abdomen the upper part of the cavity was found full of blood. After swabbing this out I found a series of haemorrhagic patches scattered over the mesocolon, but failed to find any actual bleeding point. As his condition was very grave, and the haemorrhage had ceased, I closed the abdomen. Before doing so I examined the liver and the region of the pancreas, but could find nothing abnormal. There was no fat necrosis. He died six hours afterwards.

The interesting points of the case are:

1. The spontaneous nature of the haemorrhage without any history of trauma.

2. The close simulation of the symptoms to those following a ruptured viscus. The clinical picture presented at the commencement of the haemorrhage was typical of perforated gastric ulcer.

J. W. HILLIARD, M.A., M.D.,
Honorary Surgeon, Victoria Hospital, Blackpool.

RESUSCITATION OF WOUNDED.

A GOOD deal is now being done to resuscitate wounded men suffering from shock of wounds and exposure, with a result that is at once successful to the patient and encouraging to his medical officer. The transfusion of gum solution or blood has been so markedly successful in bringing round in a few minutes many wounded men who would otherwise have died, that it suggests the possibility of going a little further. My object is in no way to challenge the methods of resuscitation in use, methods which stand on the firm rock of results, but to deal rather with the soldier at a much earlier period, so as to have certain data in hand which might serve as a guide to the intelligent treatment of cases after the first shock of battle has been tided over. I refer to the taking of the specific gravity and viscosity of the blood of every recruit at some early stage—for instance, when the man is at the height of his training, in the best possible physical condition, and every function well and equally balanced. A true index might thus be found which, if put on his card, might help to regulate intelligent direction of treatment later on if necessary.

Present methods of treatment after operation appear to me to savour too much of groping in the dark. A bridle rein is required to guide us in our movements to the goal we would attain, and this communication is a plea that perhaps Nature has the guide ready to our hand. No two individuals have quite the same diathesis; every one has his own standard. Where in one the specific gravity may be 1 or zero as his normal necessary to perfect health, in another it may be *plus* or *minus* 1 as the case may be, and to raise the *minus* too much or to raise the *plus* insufficiently might just make all the difference.

While in charge of a V.A.D. hospital in England I, in a necessarily incomplete way, put this process into practice early last year, and took the viscosity and specific gravity of the blood of many wounded soldiers. Making the normal at zero, I found very few who came up to this standard or who agreed with each other. At the time I felt very much handicapped in not knowing the specific gravity and viscosity index of the individual in normal health, but even so I met with sufficient success to warrant considering the thing seriously. The taking of the specific gravity of every soldier would entail very little time, and could be done easily, quickly, and fairly accurately with mixtures of known specific gravity (ether, glycerin, etc.) in three or four bottles, and would require no more blood and much less time than is required in an ordinary blood count. Of course much more elaborate processes could be employed, and might be so later on in civil hospitals, but the above, I am sure, would be sufficiently accurate to meet the need, and would, I am convinced, be of immense assistance to the medical officer. By gradually raising the patient to his normal index and maintaining it at that by the use of gum solutions, or saline or other methods, his diathesis could more speedily be brought to an efficient degree, increasing his resistance to septic processes, and thus restoring him to health, and shortening the period of convalescence to that which now obtains. It is in view of the probably large influx into the army in the near future of men different and indifferent alike in physical qualities and standards of health that I with great diffidence send this communication.

ROBERT B. JOHNSTON, F.R.C.S., M.R.C.P.E.,
Lieutenant R.A.M.C.

BARCOO ROT (VELDT SORE).

IN the JOURNAL of June 9th, 1917, p. 761, Lieut.-Colonel C. J. Martin has made a very interesting addition to the pathology of barcoo rot, or veldt sore.

To those of us who have lived in tropical Africa any length of time the condition is well known, and is commonly referred to by the layman as "fever sore." Martin lays stress on the infection of the hair follicles being primary; with this I am inclined not completely to agree. I believe in many cases the initial lesion is a trauma through which the infection takes place, otherwise how is the distribution—backs of hands, extensor surfaces of

forearms and shins, that is to say those parts exposed to trauma—to be explained? Why are not other parts of the body, though admittedly generally less hairy, not affected? With an affected area the size of a threepenny piece on the back of the hand, naturally one or more hairs will be found passing through the lesion, and one would expect to find the follicles infected, but I am not convinced that this is primary. On the other hand, I do believe that hair follicles in the neighbourhood are secondarily infected by organism-containing discharges from the primary sore, just as happens in any pyogenic skin infection with the production of secondary lesions.

With Harman's view of the etiology, quoted by Martin, most of us will doubtless agree—namely, that the skin cocci are able to infect the epidermal structures of a man whose defences are weakened. The loss of resistance may be from many causes. The most marked case I have seen was in a European with symptoms of scurvy, but malaria, as is indicated by the local name, is often the predisposing cause. Want of cleanliness and attention I believe assist in the spread of the lesions, but not necessarily in the production of the initial lesion.

One other point. I am not convinced that similar infections do not take place in natives; the reason that they are not observed being that every skin lesion becomes immediately secondarily infected with pyogenic cocci, and its character thus changed.

With regard to treatment, I have had uniform success with a 20 grains to the ounce salicylic acid ointment after preliminary cleaning up of the ulcer and snipping away any overlying epidermis. Tropical practitioners will be, however, greatly indebted to Colonel Martin for pointing out the part the hairs play in delaying the healing, and in being responsible for the spread of the ulcer at its margins.

H. S. STANNUS, M.D.,
S.M.O., Occupied Territory, G.E.A.

Reports of Societies.

TREATMENT OF TUBERCULOUS MESENTERIC GLANDS.

AT a meeting of the Medical Society of London on February 11th, the President, Sir STCLAIR THOMSON, being in the chair, Mr. HERBERT CARSON, in a paper on the clinical aspects of tuberculous mesenteric glands, expressed the opinion that the resistance of the glands was lowered by septic invasion from the intestinal tract and subsequently infected with tuberculosis from the same source, the tubercle bacilli reaching the intestine in milk. He analysed a series of 50 cases submitted to operation, describing three stages—that is, simple enlargement, caseation, and calcification; 37 of the patients were below and 13 above 15 years; many patients had been ill for two or three years. In giving a description of a typical case he referred particularly to pain, which he considered diagnostic. It was a true colic, and due to tonic contraction of the circular muscular coat of the bowel. The condition had to be distinguished from chronic appendicitis, ureteric stone, digestive disorders, intestinal parasites, and lead poisoning. Complications were almost all of the type of intestinal obstruction. There were three cases of intussusception in the series, which Mr. Carson considered to be due directly to spasm of the affected segment of intestine. With regard to treatment, the necessity of correcting diseases of the nose, pharynx and mouth was emphasized and laparotomy advised even in typical apparently uncomplicated cases. Mr. Carson advocated removal of the glands rather than curetting in the uncomplicated cases. Where there was obstruction he advised the removal of the glands and the freeing of adhesions or enterectomy rather than short-circuiting or the formation of an artificial anus. The paper contained an analysis of the after-results in the 47 cases of recovery.

Dr. LEONARD GUTHRIE said that in his experience calcified tuberculous mesenteric glands were usually found only after death. They were very difficult or impossible to palpate. He thought colic was not sufficient for diagnosis. He was not accustomed to ask for operation for free fluid. Intussusception, of course, and obstruction from whatever cause, must have surgical aid. In his own hospital the recoveries with medical treatment amounted to 80 per cent., and with surgical treatment to 50 per cent., the latter including surgical complications.

Mr. V. WARREN LOW thought that colic was not evidence of uncomplicated tuberculous mesenteric glands, but was definite evidence of obstruction of the intestine, due probably to a kink or adhesion. When he operated he usually left the glands alone, and prescribed rest, small doses of tuberculin, and open air. A large proportion of cases got well. He had always found the colic associated with a rise of temperature which was out of proportion to the clinical symptoms. He had not regarded tuberculous mesenteric glands as a clinical entity.

Dr. WALTER CARR thought it impossible for tuberculosis of the glands to go on to calcification without fever. Were tuberculous mesenteric glands found in every case in which the typical symptoms occurred? Calcareous glands were often found in the abdomen *post mortem*; they did not usually give rise to tuberculous peritonitis, this being caused by (1) blood infection and (2) local extension of infection from the intestine. Tuberculous mesenteric glands might give rise to miliary tuberculosis. In London the bronchial glands were more often the source of infection, whereas in Scotland the infection appeared, as a rule, to come from mesenteric glands.

Mr. H. J. GAUVAIN agreed that tuberculous mesenteric glands existed without tuberculosis elsewhere. Of 2,000 cases of the bones and joints the mesenteric glands were affected in some. He had never come across the colic described by Mr. Carson as typical of these cases. He did not operate to remove the glands. The treatment he used was open air, and, when the glands were getting smaller, he endeavoured to assist calcification by administering calcium salts.

Dr. EDMUND CAUTLEY thought that the symptoms described were not evidence of tuberculous mesenteric glands. He considered that many of Mr. Carson's cases were not instances of purely tuberculous mesenteric glands, for there were complications which showed extension to the peritoneum. Operation was not profitable unless there was a complication indicating the necessity for it.

Mr. CARSON, in reply, said that he regarded colic as a constant symptom, and without it a diagnosis of tuberculous mesenteric glands should not be made. The children he had described were all on the down grade, getting thinner and more ill. In his experience pain was not usually associated with the complications.

SYPHILIS AND STILLBIRTHS.

AT a pathological meeting of the Liverpool Medical Institution on February 14th, Mr. W. THELWALL THOMAS, President, in the chair, Professor J. M. BEATTIE read a note on the examination of 409 stillbirths for evidence of syphilis. Spirochaetes were found in the organs (liver, spleen) in 49. The blood of 35 fetuses showed a positive reaction in 26 and a negative in 9. Related to these 9, the mothers showed the following results: 4 were positive, 4 were indecisive, and one was negative. Absence of spirochaetes was noted in one fetus, in which, however (and in the mother), the blood test was positive. The negative result of the blood test in 9 fetuses was ascribed by Professor Beattie to probable bacterial infection of a saprophytic nature, interfering with haemolysis. His conclusion was that the prevalence of syphilis in regard to stillbirths was 15 per cent., and his results corroborated those of other observers. He considered it most desirable, in the absence of other obvious causes of stillbirths, that the blood should be examined with the object of ascertaining the presence or absence of syphilis. Dr. BRIGGS, professor of midwifery and gynaecology, agreed with the findings of Professor Beattie and said that the clinical evidence supported them.

VOGEL of Breslau has found that though the total incidence of venereal disease in the German army was comparatively low (about 0.3 per cent.), syphilis, as compared with gonorrhoea, had become more common. The incidence ratio of syphilis to gonorrhoea, which was as 1 to 3 or 4, had risen to 1 to 2. Another disquieting fact was the high proportion of married men—a third of the total—among infected soldiers.

Reviews.

BRITAIN'S HERITAGE OF SCIENCE.

WE welcome the appearance of *Britain's Heritage of Science*,[1] by Professor SCHUSTER and Dr. SHIPLEY, for the public has remained too long in ignorance of the commanding part played by the British in extending the boundaries of scientific knowledge. Until within recent years little or no attempt has been made to elevate the great record of scientific achievement in this country to the dignity of history; politics, the church, and the law have been investigated from every point of view by the historians, but the wider and more important field of science has been left uncultivated. To this is due an abyss of ignorance concerning the most fundamental scientific facts which largely govern the world at the present time. For this the men of science must be held in large measure to blame. Knowing the grand heritage of science in this country handed down by their ancestors, they have rarely troubled to give the glowing story to their fellow men. They have not considered it necessary to devote their powers to the task of describing, so that all may understand, the value of the scientific efforts of men who were often intellectual giants.

But this book does much to remove the reproach, and here we have unfolded by experts a comprehensive account of the activities of science in this country. The authors have successfully piloted their narrative between the style of the *Popular Science Educator* and that of the writer of scientific matter, which is too often technical and cumbersome. Any man of ordinary intelligence can, and should, understand this book, and we make bold to say that after reading it he will be amazed at the great scientific results obtained by his countrymen. So far as we know, this is the first attempt to give a comprehensive view of the history of British science in all its branches by men who occupy the position of authorities, and we congratulate them on the success of their efforts.

Having said so much, we may advance some criticisms concerning the plan and scope of the work. For the account given of scientific endeavour and its results, coming as it does first hand from experts of known ability, we have nothing but high praise and thanks to them for having conferred upon us a great benefit. More than any other branch of writing, the history of science can adequately be dealt with only by the expert, and it is no easy matter to present the subject, as the authors have, in such a form that the fundamental principles of historical writing are not violated. In this book it could not be expected that the whole history of science in these isles could be dealt with in the space of some 300 pages without considerable condensation, and we think, in the attempt to mention the names and work of so many who during the last 300 years have advanced science, the book has become overloaded.

The biographical matter contained in the volume is scanty, and no doubt the requirements of space have forbidden the attempt to give anything like full biographical details. But what is given is in such bare outline that we are constrained to believe that the book would have gained had the biographies been almost entirely eliminated. By far the larger part of the volume is devoted to a consideration of physical science, and this part may be described as a masterly review of that subject. The accounts given of the work of Newton, Cavendish, and Clerk-Maxwell are particularly competent, and, with this example before us, we could wish that Dr. Schuster would devote himself to writing a complete history of physical science, where he would be emancipated from the cramping influences of consideration of space. Such a book, we feel sure, would take rank with Whewell's *History of the Inductive Sciences*.

The last hundred pages of the book deal with biological science, and it was almost inevitable that the account would suffer from compression. With the chapters on botany and geology we have no complaint, nor with that on zoology, which contains an admirable review of Darwin's work. We think, however, that scarcely full justice has been done to the work of John Hunter, and that mention might have been made of the work of Edward Tyson.

In the chapter devoted to the history of physiology the attempt has been made to combine accounts of physiology, medicine, and pathology, and the result has not been altogether successful. Even had the history of physiology alone been attempted, a short chapter of twelve pages would scarcely have sufficed to give even a bare outline of the work accomplished by British physiologists. Many omissions occur; not a word is said about the work of Matthew Baillie, of Richard Bright, and of William Prout, while others receive only a passing word. If Sydenham, whose great work was mainly clinical, finds a place, surely the same honour should be accorded to Heberden, Willan, Sir Thomas Watson, and others. In another edition this chapter might well be remodelled, not only in the direction of amplification but also in arrangement, for it gives the impression of having been thrown together rather loosely. We should also have welcomed a chapter on anatomy, for this country possesses a great heritage in that subject, and the work of Douglas, Parsons, Monro, the Hunters, Baillie, and Wilson, together with many of their successors, should receive due recognition.

But these points do not greatly mar the general excellence of the book, and we again thank the authors for having described the effort of Great Britain in such a way that all may know the part our countyrmen have played in the realm of science.

[1] *Britain's Heritage of Science*. By A. Schuster, F.R.S., and A. E. Shipley, F.R.S. London: Constable and Co. 1917. (Cr. 8vo, pp. xv + 334; 15 portraits. 8s. 6d. net.

TREATMENT OF CEREBRO-SPINAL MENINGITIS.

PROFESSOR DOPTER, in his book on the diagnosis and treatment of cerebro-spinal meningitis,[2] gives, in a preliminary description of the clinical aspects, an account of the latent cases and of the manifestations in old people, who show little fever and very well marked contractions. In some anomalous cases the cerebro-spinal fluid is clear, and contains a predominance of lymphocytes (76 to 80 per cent.); but if the patient survives, the ordinary polymorphonuclear predominance soon follows. After considering the diagnosis from meningism, the distinction from other forms of meningitis is shown to depend on bacteriological examination. How entirely up to date this work is may be gathered by the reference to the occurrence of meningitis due to infection by the *Spirochaeta icterohaemorrhagiae* without jaundice. Clinically cerebro-spinal fever may be confused with typhus, but in meningococcic infection the purpuric rash appears on the first or second day, whereas in typhus it is not seen before the fourth day of the disease. The laboratory tests are fully dealt with, and illustrated by figures.

The subcutaneous and intravenous injections of serum Dopter considers useless. He recommends washing out the subarachnoid space with normal saline before the injection of serum. The injection of serum into the cerebral ventricles is described both in infants and in adults after trephining. The beneficial effects of antimeningococcic serum are insisted upon, and its failure from factors such as insufficient treatment, meningitic adhesions, blocking of the communications between the subarachnoid space and the cerebral ventricles, and the presence of Dopter's pârameningococcus, is discussed. Serum disease is not more frequent after intrathecal than after hypodermic injection of serum. The occurrence of meningeal symptoms due to serum treatment is described and explained. This handy volume gives an excellent account of the diagnosis and treatment in a short space.

[2] *Diagnostic et traitement de la méningite cérébro-spinale*. By Dr. Dopter, médecin principal de 2e classe, professeur à l'Ecole du Val-de-Grâce. 1918. Paris: J. B. Baillière et fils. 1918. (Cr. 8vo, pp. 96; 17 figures. Fr. 2.

HEWLETT'S "PATHOLOGY."

THE fourth edition of Professor HEWLETT'S book, *Pathology, General and Special, for Students of Medicine*,[3] maintains the general standard of excellence of the preceding editions. The text has been subjected to revision and several of the old sections have been expanded and new matter, particularly in connexion with the war, has been added, as, for instance, on trench foot, trench fever, trench nephritis, toxic jaundice of munition makers, gas gangrene, and gassing.

Without wishing to be hypercritical, we would have

[3] *Pathology, General and Special, for Students of Medicine*. By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H. Fourth edition. London: J. and A. Churchill. 1917. (8vo, pp. 631; 37 plates, 15 figures. 12s. 6d.)

liked to see a rather more generous treatment of the subject of pigmented moles or melanomas with a brief account of their structure; and some reference to the more modern views on the subject of chronic endometritis, to the haemolytic forms of jaundice, and, perhaps, a modification of the phrase on p. 428, "Recent work has shown that haematogenous jaundice probably does not exist." This work can no longer be classed as "recent." Further, on p. 582, under the section on tumours of the brain, aneurysm seems out of place. A word or two on the occurrence of aneurysms of the branches of the circle of Willis might well have been added, especially in view of the frequency with which they occur and of the possibility of leakage tingeing the cerebro-spinal fluid, which is so often examined nowadays.

The book is illustrated by thirty-seven plates and fifteen figures. Some of the plates with figures of microscopical sections might be better. They are reproduced in very much too dark a tone, so that the detail is obscured.

The book remains an admirable one for students of medicine; it is concise and clear and contains a sufficient summary of the various theories concerning some of the more complex phenomena to form a sound basis on which to build further study.

NOTES ON BOOKS.

DORLAND'S well-known *Medical Dictionary*,[1] first published in 1900, has now reached its ninth edition, and contains more than 2,000 new terms, mainly due to the war, and over 40 pages more than before. There is such an extraordinary amount of information contained in this encyclopaedic dictionary that it is impossible to imagine any brain that could carry all the details given on the various subjects. The lists of diseases, tests, syndromes, operations, and methods supply the answer, sometimes hard to obtain, as to what So-and-so's disease or test is. Most readers agree that the use of the describer's name in the nomenclature of disease is generally undesirable, but as it appears that the habit cannot be suppressed entirely, it is well to have an unfailing source of reference. It has often been said that on the whole it is just as useful to know where to find a piece of information as to have it at the tip of the tongue, and those who share this belief will find Dorland's dictionary, with its illustrations, an invaluable source of reference.

[1] *The American Illustrated Medical Dictionary.* By W. A. Newman Dorland, A.M., M.D., F.A.C.S. Ninth edition, revised and enlarged. Philadelphia and London: W. B. Saunders Co. 1917. (Pp. 1179; 317 illustrations, of which 115 are coloured. 21s.)

HOSPITAL FOR LIMBLESS MEN, CARDIFF.

THE Prince of Wales Hospital at Cardiff for men who have lost limbs, opened by the Prince on February 20th, is designed to meet the needs of sailors and soldiers who have lost limbs in this war, but it is intended to be a permanent institution for the benefit also of men crippled by accidents in agriculture or other industry. It is the gift of citizens of Cardiff to Wales and Monmouthshire.

The movement for its establishment was initiated by Colonel Lynn Thomas, C.B., C.M.G., who, from his experience as one of the consultant staff of the Roehampton Hospital for limbless men, had become impressed with the need for establishing corresponding institutions in each part of the country. His proposal was supported by the then Lord Mayor, Dr. R. J. Smith, and before any public appeal was made funds were found for the initial expenditure by two Cardiff merchants, Mr. J. P. Cadogan and Mr. W. Percy Miles. A large house which had been the Mansion House of Cardiff was purchased in September, 1916. It had a garden and outbuilding. Beyond the garden were two other smaller houses, and both of these were purchased; the one has been converted into an officers' block containing 12 beds, and the other into a home for the female staff. The main building provides accommodation for 53 men, and a ward with the necessary attached offices has been reserved on the ground floor for those who have lost both legs. In October, 1916, Commander Lord Tredegar, R.N.V.R., presented the freehold of the whole property.

The house is entered by an inclined plane, and another leads into the garden. On the open ground between the main building and the quarters for the officers and staff, workshops for the making of artificial limbs, a parade hall, and billiard rooms for officers and men have been established. Experience having shown that it is very necessary in such an institution to have arrangements for testing artificial limbs in actual use, special provisions have been made in the parade hall and in the garden. The aim has been to enlist the man's interest and co-operation all through. When a man first wears his permanent artificial leg he is taken to the parade hall, a long room with terrazzo floor and two sets of parallel bars to suit men of different heights; he makes his first steps resting his hands on the bars and walks towards a mirror, in which he can see for himself any error he may make in his first attempts, and is shown by an instructor how to correct it. An artificial limb cannot be considered perfectly adjusted until it is of exactly the right length, and of this the man himself is the best judge. Sometimes, however, he finds difficulty in judging; this is overcome by a very simple expedient. The parade hall is provided with long, loose narrow boards varying in thickness from an inch to a quarter of an inch; the man tries walking with his artificial limb on one board after another until he finds the board which exactly suits him. The leg is then elongated by the thickness of the board.

The garden has been laid out with taste and skill, so that in his next stage the man can get accustomed to variations in the pitch of roads and paths, which pass almost unnoticed by a man with two sound legs. This "miniature Wild Wales" has rough stone paths, some on the level and others presenting gradients varying in pitch up to 1 in 3½; moreover, the paths are laid so that as the man walks his right foot is in one stretch higher than the left, and in another the left higher than the right.

For a man who has lost both lower limbs the difficulty of learning to walk is very great; in order to get into the artificial apparatus he has had to depend on two people to lift and steady him, and it was not easy for him to gain confidence. This difficulty has been overcome by a special appliance, an "aërial-transporter crutch," consisting of pulleys and tackle, by which a man can lift himself from his wheeled chair into his artificial limbs and allow so much of his weight to rest upon them as he feels he can bear.

The training of men in the use of artificial arms is superintended by an armless collier, himself the inventor of an ingenious worker's arm (the Welsh arm) which he has used successfully for over twenty years. In the garden there are pits for the men to practise shovelling, and the use of the pick, axes and saws, and wheelbarrows. In addition to outdoor work there are shops for steel workers, carpenters, glass-blowers, and leather workers, which are carried on under the supervision of the Cardiff Technical College.

The artificial limbs are made on the spot, so that it is easy to carry out minor adjustments, and no man is discharged until he pronounces his limb comfortable. The workshops are provided with apparatus for testing the breaking strain of steel wires, thongs, and ropes used in the construction of limbs, and provision is made also for experimenting with new inventions and designs for artificial limbs for the upper and lower extremity.

The new hospital serves during the war as a special annexe of the Orthopaedic Centre, Welsh Metropolitan War Hospital, Whitchurch, to which the wounded are admitted either direct from a convoy or after a period in a general hospital. At Whitchurch the patient undergoes such surgical treatment, including operation, as may be necessary, and when he has reached a suitable stage of recovery is fitted with a temporary appliance called a "pilon," first used, we believe, by Belgian surgeons. It is a modification of the old-fashioned peg-leg the bucket being made of plaster-of-Paris bandages. With this temporary appliance he is encouraged to get about, and as soon as possible is sent to an auxiliary hospital at the seaside (Penarth). When he has made suitable progress he is admitted to the Prince of Wales Hospital and provided with an artificial limb and passed through the scheme of training. In a similar manner men who have lost an arm are first admitted to a Red Cross hospital at St. Pierre, Cardiff, with a temporary appliance, and are later sent to the Prince of Wales Hospital. Officers who have lost a limb go during the time for which they are wearing the temporary appliance to another Red Cross hospital in Cardiff. By this arrangement the beds in the Prince of Wales Hospital are kept free for patients who are being actually fitted with a permanent limb.

British Medical Journal.

SATURDAY, FEBRUARY 23RD, 1918.

FORMS AND REFORMS.

SIR WATSON CHEYNE, in his speech on the address at the opening of the new session of Parliament on February 12th, expressed an apprehension that the moral of the country was in danger of being lowered by the growth of the belief that things which tend to interfere with the earnest prosecution of the war were not being put down with a strong hand; that there was too much yielding to expediency; that there was undue delay in making decisions, and in taking action when decisions were made; that parochial instead of wide views were allowed to prevail; that underhand intrigue, whether in favour of an individual or a section of the community, was not put down with a firm hand; and that incompetence was condoned, and in some cases seemingly rewarded. Sir Watson Cheyne was no doubt speaking quite generally, though the two illustrations he gave referred to medical matters. They both related to delays; in the one case the delay in the publication of the report of the Committee sent to France to inquire into matters connected with the personnel and administration of the medical services in that country, and in the other the delay in the establishment of the Air Medical Service. He did not explain his hint that "incompetence is condoned and in some cases seemingly rewarded," and he may not have been thinking specially of the medical services, but some appointments made in those services cannot but make the judicious grieve.

A fortnight ago we gave some particulars of the extent of the Home Commands, and of the importance of the duties with which the Deputy Directors of Medical Services in these commands were entrusted, instancing as one, and the chief example, the control and inspection of the very large number of military hospitals of various grades, and of the different special institutions which exist in each command. There are officers holding these appointments who, to speak for once quite bluntly, have not given evidence that they possess the knowledge, ability, or adaptability qualifying them to discharge the duties of the offices they occupy; it is, indeed, alleged that the recommendations of competent advisers have been misunderstood, ignored, or obstructed. We shall be glad to be assured that, in making appointments to these influential posts, merit, competence, and mental elasticity to adapt itself to the new conditions have alone been taken into account, and that senior officers have not been appointed merely because, in peace, it has been the habit to appoint senior officers to these posts, and because there were no other posts of lesser responsibility vacant. We should very much regret to think that Sir Watson Cheyne's statement, that in the army "incompetence is condoned and in some cases seemingly rewarded," applied to the medical service.

Leaving out the Aldershot Command and the London District, which are special cases, the whole of Great Britain is divided into five commands. There are about 88,130 square miles in Great Britain, so that if it were equally divided there would be about 17,620 square miles in each command; scattered over each of these areas there are a very large number of hospitals, it may be as many as four hundred, many military institutions for the treatment of special conditions, and also convalescent camps, command dépôts, and other medical units. But Great Britain is an island of very irregular form, and the areas of the commands are not symmetrical geometrical figures. The Western Command, for instance, is an acute angled triangle with its apex at the Solway and its base at the Bristol Channel, a distance in a straight line of about 240 miles. The map of Scotland, or of the Northern or Southern Command, reveals very similar geographical configuration. If we suppose the principal medical officers of the various commands energetic men, possessed of wide and varied clinical knowledge, so that they could quickly judge the efficiency of the treatment given, having experience in the management of a busy hospital (which an army medical officer trained in peace may never have entered since he was a student), and if finally we suppose them endowed by a fairy godmother with seven leagued boots, then possibly their administration might be efficient.

We understand that recently the number of Assistant Directors of Medical Services has been increased, in the hope that they might help the Deputy Directors of Medical Services in the commands, especially, we gather, in the inspection of hospitals. There is, we fear, much room to doubt whether these new appointments for senior regular medical officers are likely to produce the desired result. Some at least of these officers appear to suffer from the delusion (which they take no pains to conceal) that anybody can operate, but that it takes a very clever fellow to administer. They do not, however, seem to be proving the proposition in their own persons. There is evidently a risk, at least, that they may attach undue importance to outward forms and be more concerned, for instance, in the correctness of the patient's costume than in the rightness of his treatment. They, or some of them, have succeeded in conveying the impression that in home administration they are still governed by what is said to be the watchword of some of their fellow officers abroad, "Evacuate! evacuate!" Whether this watchword can be applied abroad except by men of good judgement and sound clinical instinct is a matter which may be open to discussion, but, whatever its value with an army in the field, it cannot be transferred directly to hospitals at home, where quite different criterions as to the length of time a man should be retained for surgical or other treatment apply.

The matter of records may be taken as a concrete example of the strange inability of some principal medical officers to understand a new idea. We explained last week the simplified and improved system worked out at the request of the War Office by the statisticians of the Medical Research Committee charged with the compilation and analysis of army medical statistics, and pointed out the many advantages of a uniform system. It might have been supposed that any man of the world possessing business ability would have rejoiced at the change. But the Deputy Directors of Medical Services, or some of them, had not the gumption to take care that the change was made—that orders were obeyed. The result is that in some hospitals, if not in all, the new system has been superimposed on the old, and the two sets of forms, the old and the new, are still required to be made out, no doubt

"in own handwriting." Such a result may seem beyond belief, but some who have had experience of army ways, especially at home, seem to find it quite easy to believe. We are told that not all authorities are equally zealous in the collection of autographs, but their assiduity is irritating enough everywhere. We know of one military hospital where the signatures of orderly medical officers are collected at the rate of 4,000 a day. On a rough calculation the signatures for a year, if arranged in a row, would extend from London to Aldershot or thereabouts. We know of another hospital, not so large, where the number of returns required to be furnished by the officer in charge alone to head quarters averages sixty-three a week. Is any one so simple as to suppose that head quarters reads them? Then in this, as in every other military hospital as at present administered at home, there are all the reports and notes of all the medical officers of all the wards and divisions, and all the diet sheets to be noted daily, the handwriting of no one but the medical officer being permitted to appear, and all the proceedings of boards, and so on, and so on. As was stated last week, we have been informed that there is no army regulation requiring reports of boards to be furnished in triplicate and in autograph. But, though there was no regulation justifying it, the requirement was enforced. Who is to blame for this irregularity entailing so great a waste of medical man power at a time when there is a great shortage of it? Until better informed, we can only reply—the Deputy Directors of Medical Services in the Home Commands, whose business it is to see that instructions are carried out and not exceeded. They are nothing if not administrators, but in this, as in not a few other respects, they seem to have failed as administrators.

The Army Medical Service started this war with a great asset in the goodwill of the civil profession and the confidence inspired by the knowledge that Sir Alfred Keogh, who had planned the Territorial medical organization, would be in charge to watch over its application from the chair which he is about to vacate. The civil profession, through the British Medical Association and other civil professional bodies, had striven hard for the autonomy of the Army Medical Service and to ensure that it should be provided with adequate means and authority for carrying on its duty to the army. It was rewarded by the smoothness with which the plans to meet such an emergency as that of the autumn of 1914 worked, by the success of the schemes for the prevention of epidemic diseases in the armies, and, above all, by the spirit of comradeship and enthusiasm in which the new problems in the treatment of the wounded and sick were speedily tackled and steadily investigated until one by one each has been solved or brought nearer solution, with ever-increasing improvement in results and untellable diminution of suffering and permanent incapacity.

In the articles published in recent issues we have endeavoured to deal with defects which the long continuance of the war and the great accumulations of wounded, disabled and sick have disclosed, especially at home. We have sought to do so with frankness but with every consideration for individuals. We know that some reforms have been and are being introduced, but we are convinced that many others are necessary and that the demand for their application is becoming irresistible. We believe that the Army Medical Service still has an opportunity of initiating and carrying through these reforms if it will act promptly without fear or favour.

CRANIO-CEREBRAL WOUNDS.

Opinion as to the principles and practice of cranio-cerebral surgery in advanced formations in the field has undergone considerable modification in the past three years. Upon military grounds some still hold that penetrating wounds of the skull demand more time and skill, than can be justified by results, in periods of heavy fighting, arguing that the "walking wounded" and those likely to return to the firing line, should, by preference, receive attention from the most experienced operators. On the other hand, it has been the aim of the medical services, when possible, to save every man who can be rescued by promptitude and skill, whatever his prospects as a combatant for the future; hence the admirable advanced operating centres for "head," "abdominal," "chest," and "femur" wounds established within easy reach of the fighting front. Notwithstanding wide divergence of view in some directions, there is almost unanimous agreement among medical men of all armies, allied and enemy alike, that early operation is imperative, and that all cases not actually moribund should be afforded such additional chances of recovery as operation offers.

The special centres set up in our own armies have done admirable work, not only directly, by saving individual lives, but also, encouraged, supported, and guided by the higher authorities, indirectly, by affording opportunities for regular weekly discussions amongst the medical officers, and for the systematization of records. It was of happy augury for surgery when the friendly arrangements between the medical corps of the British and United States armies led to an American officer with an international reputation in operative neurology being posted to one of these centres. Professor Harvey Cushing brought to a strange field and new conditions a great experience and a finished technique; he was provided with a complete equipment and a trained team of assistants. In his first weeks of work he ascertained that the existing rate of operative mortality was very much the same as that in all other similar centres—namely, 50 per cent. He frankly faced the hard fact that his own earliest results were not quite so good; sought the reasons; discarded whatever in his accustomed methods seemed unsuitable, and adopted novel ones, justifying his departures from his own past practice by a steady reduction of mortality from 55 per cent., in three months, to 29. It was a remarkable achievement, and we can well believe that to watch the evolution of his practice in those three months was a lesson not thrown away upon the centre, especially the operators, and that it has had an effect upon their own results.

Professor Cushing, whose preliminary communication we publish this week, would be the first to admit that while he taught, he also learnt, and that the particular routine and technique he personally employs and now describes, as indeed he expressly states, is not the only one capable of producing results similar to his own. He starts from the ground common to all workers in the field of war wounds: "infection" is the bugbear. All clinical experience points that way; autopsies, such as the consecutive series carried out at the same group centre, particularly by Captain W. Briggs, clinch the argument. The essence of Cushing's as of other successful schemes for the elimination of infection, is a simple but invariable routine carried out with minute attention to details from the earliest moment.

It is, perhaps, worth insistence on some of his chief details. He begins at the field ambulance, with the

suggestion that every "head" case should have a first dressing of spirit soap; this facilitates shaving very materially, and the razor is one of the best "antiseptics" for the skin. He advises local anaesthesia in preference to inhalation, although formerly he was a convinced adherent of the latter mode. His method of removing the damaged area of bone *en bloc*, though it needs suitable instruments, is simple, easy, and purposeful. The finger, that most delicate of probes, is, he says, too clumsy for the brain. Replace it, then, by a very soft catheter, which, employed as he directs, is at once an exploring antenna and an almost perfect means for cleansing a brain track of the detritus which is an already-inseminated culture medium. Then follows the removal of all accessible foreign bodies: bone, by suction, or by delicate forceps after localization, favoured oftentimes by aid from the conscious patient who coughs to order; metal, by the magnet when feasible.

With a wound, then, as clean and dry and free from extraneous matter as possible, but almost surely not free from organisms, is it practicable to inhibit the growth of bacteria, at any rate until the natural defensive forces have rallied? In the use of dichloramine-T, dissolved in oils, Professor Cushing thinks he has found a means for continuous antibacterial action without harm even to the cerebral tissues, and, so far as his clinical series constitutes an experiment, the evidence is in his favour.

After the primary operation all cases should be dressed in the theatre under like conditions—recleansing of the track, lumbar punctures, secondary operations if needed, secondary sutures, all should take place as part of the daily routine under the surgeon's own eye, if not always by his own hand. The time spent is amply repaid, and the system has another great advantage, that it ensures completion of the neurological records begun at the moment of admission. It is mainly because the triradiate incision leaves the track more accessible to inspection and cleansing at the dressings that he prefers it to the flap. It was a rule of these centres, before Professor Cushing arrived, that every case must be retained until the danger of post-operative complications was certainly passed—that is, for the best part of a month or longer—so that when he speaks of his cases as having "passed the stage of conceivable complications" before evacuation, he is clearly not referring to late symptoms such as those occurring in the remarkable case we publish to-day, where Captain Rayner and Captain Barclay effected great improvement, both psychical and physiological, by the late extraction of a small foreign body, using an ingenious instrument of their own device.

One of the trials of operators at a "head" centre dealing with cases of which hitherto one in two have died in their hands, is the uncertainty as to how much value in the community those whom they save will eventually have. Are they but preserving their lives to leave them a burden to their friends and to the state? There is a certain amount of information in our own recent literature[1] and a considerable body in continental journals—for access to which we have to thank the unobtrusive and necessarily imperfectly acknowledged but fully appreciated labours of the Medical Research Committee—altogether an accumulation of evidence that late complications are neither so numerous nor so serious as was formerly believed.

It is to the perfecting of early operations and to the refinement of practice in the immediate and remote after-treatment we must look for the abolition of damaging sequelae. Thanks to Cushing, thanks also to the initial contributions of Gray, Sargent, and many another British surgeon, not to mention our continental brethren, we are on the road to the goal.

[1] Vide, for example, BRITISH MEDICAL JOURNAL, January 5th, 1918, p. 29.

MEDICAL STUDENTS IN THE RANKS.

A NEW Army Council Instruction, No. 153 of 1918, has been issued with regard to the release of medical students serving with the colours for the purpose of resuming their professional studies. A medical student now serving with the colours who at the time of his enlistment was engaged in medical studies, and who (*a*) is in his third year, or (*b*) at the time of enlistment had passed the whole of the professional examination in chemistry, physics, and biology (or botany and zoology) for a medical degree or licence, is, if eligible and he so desires, to be transferred (regardless of his medical category) to Class W or W(T) of the Reserve, or discharged if ineligible for transfer to the Reserve, for the purpose of resuming his studies with a view to obtaining a medical qualification. A third year student is defined as one who had on or before enlistment completed two years of medical study, and who can within thirty-six months complete his professional curriculum and obtain his medical degree or licence. A medical student desiring to be released from the colours under this Instruction must apply through the usual channels, stating the date on which he wishes to be released, and undertaking to resume his studies with a view to qualifying. Presumably the application should be made in the first instance to the company officer in the case of a soldier, and to the commanding officer when the applicant holds a commission. If a third year medical student, he will be required to produce a certificate from the dean of his medical school (or the official corresponding to the dean), showing (1) whether he has or has not passed his professional examination in anatomy and physiology; (2) that prior to enlistment he had satisfactorily pursued his professional studies during two years, and was then actively studying with a view to qualification; and (3) that he can qualify within thirty-six months. If not a third-year student, he must produce a certificate from his dean showing that prior to enlistment he had passed the whole of the first professional examination, and that at or immediately before enlistment he was actively pursuing medical studies and had been studying as a whole-time medical student for at least six months at a recognized medical school or college. In each case the student will add to the certificate the address of the medical school at which, and the date on which, he is going to resume study. General Officers Commanding at home and abroad are directed to issue the necessary orders for bringing the provisions of this instruction before the notice of the medical students concerned, and to obtain from officers commanding units the names of men who have produced the certificate mentioned above, and who desire to be released. The further procedure is also given in detail. In the case of medical students serving in the ranks the approving authority for their release will be the General Officer Commanding, but where a medical student who comes within the terms of the Instruction is holding a commission a statement of his case, together with the necessary certificates, is to be forwarded by the General Officer Commanding to the Army Council for its consideration and decision. Any student transferred to the Reserve must forthwith resume his medical studies and enrol in an officers' training corps, under penalty of being recalled to the colours. At intervals not exceeding six months he must forward to the officer in charge of records a certificate from his dean stating that he is satisfactorily pursuing his studies and making reasonable progress therein, together with a certificate (except in the case of students coming under A.C.I. 1196 of 1917) from the commanding officer of

his officers' training corps, stating that he has made himself efficient during the preceding six months. A.C.I. 1196 of 1917 applies only to medical students who have held combatant commissions, and have been returned to their professional studies. These, if not given honorary rank, must undertake and carry out all the ordinary officers' training corps obligations of medical students.

SURGICAL SHOCK.

IT will be remembered that at the end of February, 1917, the Medical Research Committee issued a memorandum on surgical shock and some allied conditions, which we published in full on March 24th, 1917. In August, 1917, the Committee appointed a Special Investigation Committee to co-ordinate inquiries into surgical shock and allied conditions, with a view to the correlation of laboratory and clinical observations. It consisted of Professors E. H. Starling (chairman), F. A. Bainbridge, W. M. Bayliss, W. B. Cannon, M.D. (Harvard, Captain M.O.R.C., U.S.A.), A. N. Richards, Ph.D. (University of Pennsylvania), C. S. Sherrington, Surgeon-General Cuthbert Wallace, Colonel T. R. Elliott, Captain John Fraser, R.A.M.C. (of Edinburgh), with Dr. H. H. Dale as secretary. The Medical Research Committee has now received three reports through the Investigation Committee, and these have been printed for official distribution; but as they are of an interim nature they will not be placed on sale until the investigation has proceeded further, when it is hoped that a volume may be issued for sale. The first report, on intravenous injections to replace blood, by Professor Bayliss, brings down to a later date (November 25th, 1917) the results of his researches as detailed by himself in the JOURNAL of April 28th, 1917, p. 564, and in his paper to the Royal Society, a note upon which was published in this JOURNAL on December 8th, 1917, p. 772. The third report (January 7th, 1918), by Captains Hamilton Drummond and E. S. Taylor, R.A.M.C.(T.), discusses the use of intravenous injections of gum acacia in surgical shock. They used clinically the solution mentioned in the February memorandum of the Medical Research Committee, with the addition of gum; the formula is, sodium chloride 2 grams, potassium chloride and calcium chloride, of each 0.05 gram, powdered gum acacia 5 grams, distilled water 100 c.cm. The solution was made in a mobile laboratory by Major J. W. McNee, and, to remove all particles, was filtered through paper pulp under pressure before being autoclaved. More recently it has been found convenient to make up a solution of five times this strength, and to dilute with sterile water as required. No untoward effects were observed, and at necropsies on cases which succumbed from their wounds after transfusion no pathological lesions dependent on the fluid introduced (thrombosis, etc.) were met with. The fluid must be introduced very slowly, allowing fifteen to twenty minutes for each pint injected. The transfusion has been carried out with the ordinary apparatus used for injection of saline, the solution being kept at 118° F., and a pint being the amount usually given at one time. The best results were obtained in haemorrhage attended by little shock; fair results were met with in haemorrhage with shock of moderate severity; little improvement was obtained in cases of advanced shock dependent on severe damage to hollow viscera. The great importance, in wounds of the extremities, of arresting all possible sources of haemorrhage before transfusion is pointed out; otherwise as the blood pressure rises haemorrhage may at once begin again and leave the patient worse off than before. In some severely lacerated limbs it was found best simply to apply a tourniquet before the transfusion was begun and to deal with the bleeding points at the subsequent operation. In cases of intra-abdominal haemorrhage the practice has been to start the transfusion at the beginning of the operation, losing no time in finding the sources of the bleeding immediately the abdomen is opened. The second report is the joint production of Captains Cannon, E. M. Cowell, J. Fraser, and A. N. Hooper. It consists of a series of papers on blood pressure in wound conditions, on alterations in the distribution and character of the blood, on acidosis, and on the initiation, nature, and preventive treatment of wound shock, with which we cannot at present deal.

ACTION OF ALCOHOL.

AN Advisory Committee was appointed in November, 1916, by the Central Control Board (Liquor Traffic) to consider the conditions affecting the physiological action of alcohol, more particularly the effects on health and industrial efficiency produced by the consumption of beverages of various alcoholic strengths. It consisted of Sir George Newman (Vice-Chairman), Professors Cushny and Sherrington, Dr. F. W. Mott, Dr. H. H. Dale, Mr. W. McDougall (Reader in Mental Philosophy, Oxford), Captain M. Greenwood (Reader in Medical Statistics in the University of London), and Dr. W. C. Sullivan (Medical Superintendent of the Rampton State Asylum for Criminal Lunatics), with a lay chairman. Its report, with a preface by its lay chairman, Lord D'Abernon, has now been issued in a slim volume, entitled, *Alcohol: its Action on the Human Organism*.[1] It is a very balanced document, and will not altogether please the advocates of total abstinence, inasmuch as it shows that some of their habitual statements are exaggerated. At the same time, it does not give the believer in the extraordinary merits of alcoholic beverages any ground to rejoice. The most it can say in his favour is that the temperate consumption of alcoholic liquors, in accordance with certain rules of practice, may be considered to be physiologically harmless in the case of the large majority of normal adults, and that this conclusion is fully borne out by the massive experience of mankind in wine-drinking and beer-drinking countries. But it adds that it is true that alcoholic beverages are in no way necessary for healthy life, that they are harmful or dangerous if the precautions advised are not observed, and that they are definitely injurious for children and for most persons of unstable nervous system, notably for those who have had severe injuries of the head, or who have suffered from attacks of mental disorder or from nervous shock. The Committee points out that the main action of alcohol, apart from the effects of its continued excessive use, is confined to the nervous system, that it is narcotic rather than stimulant in action, that its nutritional value is strictly limited, and that its habitual use as an aid to work is physiologically unsound. On the vexed question of the formation of the alcohol habit and the existence of craving the Committee expresses the opinion that the person who is in the habit of taking alcohol takes it primarily for the sake of the agreeable effects produced through the nervous system, because he finds that it relieves the sensations of fatigue, and because he believes that it gives him increased energy for his work. It is held that while the return or persistence of these motives undoubtedly contributes to the regular use of alcohol it differs from such habit-forming drugs as opium and morphine in the fact that its sudden withdrawal causes less severe symptoms and that no high degree of tolerance is acquired by its prolonged use, but it is pointed out that these are differences in degree rather than kind. In regard to the common use of alcoholic beverages in moderate quantities, such as the habit of many people to take wine or beer with meals, the Committee expresses what we conceive to be the sound view—namely, that these beverages are taken because to the majority the taste and immediate effects are agreeable, and that the pleasure derived therefrom outweighs their estimate of remoter harm, if any thought be given to such ulterior considerations. "To the abstainer either the taste or the immediate effects are not agreeable, or the

[1] London: H.M. Stationery Office. Price 2s. 6d. net; 2s. 10d. post free, or through any bookseller.

remoter ill, whether real or imaginary, seems more important. Each class manufactures arguments in favour of its own line of conduct." The report does not deal with the social evils or moral problems which result from the excessive use of alcoholic liquors, but solely with the physiological aspects of the alcohol question. The precautions the report recommends are that the ordinary use of alcohol should not only be moderate but that it should be taken at intervals of time sufficient to prevent the persistent presence of a deleterious amount of the drug in the body, and that to avoid direct injury to the mucous membrane of the stomach alcohol should not be taken in concentrated form and without food. There are two or three useful appendices; one of these shows what we have found it difficult to come by—namely, the amount of proof spirit and of absolute alcohol in the usual retail measures of the ordinary alcoholic beverages. The report is a very guarded statement, but as an impartial presentment of the case will be found extremely useful and informing.

COMPULSORY RATIONING.

THE rest of Great Britain has not had to wait long for the extension of the Meat Rationing Order, which comes into force for London and Home Counties on Monday next. In a number of other districts committees already have in force registration or rationing schemes for meat which have had the effect of abolishing or diminishing queues, and the committees in districts where meat queues are still prevalent are being urged to adopt temporary registration schemes before the compulsory scheme comes into force on March 25th. In France the order to which we have already referred also comes into force on Monday next. It forbids the manufacture of fancy breads, and requires that flour used for the manufacture of bread shall consist of whole flour with or without certain authorized additions. The weight of bread to be allowed will eventually be regulated in accordance with the occupation of the consumer. The order forbids altogether the manufacture or sale of pastry, or fancy biscuits, or sweetmeats prepared with sugar or honey, or with milk or cream; or ices made with milk (fresh or condensed), cream, eggs, sugar or flour. In hotels, restaurants, clubs, buffets, and teashops, butter, milk, cream, or cheese may not be supplied, and at a hotel, restaurant, or club, when the charge for a meal is more than 6 francs, two dishes only, with a modicum of bread, soup, and a *hors d'œuvre* or oysters may be served, but dessert may be taken provided that it contains nothing made with cream, milk, sugar, eggs, or flour. No grain suitable for human food may be used for the manufacture of alcohol, nor given to any animal. The use of chocolate for making sweetmeats will be stopped after March 2nd, and on that date regulations will come into force as to the sale of gluten bread and similar products. The seller must have a licence, and every package must bear his name, and particulars as to the composition of the special bread.

AN OLD EXPERIMENT IN RATIONING.

IN these times of short supplies it is right to profit by the experience of our ancestors, but, in drawing conclusions, it is as well to be sure we know what that experience was. These reflections were prompted by hearing the remark that the famous case of the Millbank penitentiary established the importance of a meat ration for prisoners. The Millbank experience is, indeed, highly instructive, but, as we shall proceed to prove, the lesson to be learnt is not quite that deduced by our interlocutor. We suppose that the, perhaps, not very large number of medical men who have even heard of the Millbank case derive their knowledge of it (possibly not at first hand) from a little treatise published in 1825 by Dr. P. Mere Latham, physician to St. Bartholomew's Hospital, under the title, *An Account of the Disease Lately Prevalent at the General Penitentiary.* In this work Dr. Latham sets forth how in July, 1822, the penitentiary diet underwent a change which "reduced the animal part of the diet almost to nothing." In lieu of solid meat, the prisoners were given soup made of pease or barley in which ox heads were boiled in the proportion of one ox head to 100 male prisoners. Latham estimated that this allowed an ounce and a quarter of meat to each person. By the late autumn the "general health of the prisoners began visibly to decline. They became pale and languid, and thin and feeble. Those employed in tasks requiring much bodily exertion were unequal to the same quantity of work as formerly. Those at the mill could grind less corn; those at the pump could raise less water. From time to time several of the laundry women fainted under their work; and the business of the laundry could only be carried on by continually changing the hands engaged in it." By February both scurvy and dysentery had a grip of the prisoners. The scurvy was soon checked when the diet was improved, fresh meat and oranges being given, but the dysentery was not to be denied, and in the end "the only measure which remained was to set at liberty all the female prisoners, without exception, for the sake of preserving their lives." The bulk of Latham's work is devoted to a careful and extremely interesting study of the clinical features of the epidemic of dysentery, and the casual reader might certainly infer that the only change at Millbank in 1822 was the reduction of meat; hence the natural inference that fresh meat must be given. But Latham, writing so near the event, did not think it necessary to enter into details which he might reasonably assume to be familiar to his readers. Even in 1823:

Non obtusa adeo gestamus pectora Poeni,

at any rate to the extent of ignoring altogether the sufferings of these malefactors, particularly when urged by the verdict of a coroner's jury to the effect that one of them was starved to death. A Select Committee of the House of Commons reported on the incident. The report is a voluminous document; many pages are devoted to the question of whether the prison doctor had or had not on a certain night drunk too much wine; others record the badgering to which the temerarious deputy coroner and his jury were subjected; while on the slightest provocation, or without provocation, members of the committee or witnesses delivered speeches the phrasing of which would turn a modern parliamentarian green with envy. But amid all this verbiage is embedded useful physiological information. Meat was not the only article of diet reduced. In addition to giving the ox-head soup instead of 24 oz. of cooked beef, without bone (6 oz. four times a week), a daily allowance of 1 lb. of boiled potatoes was cut off and nothing given in exchange; less gruel was also provided. The result, so nearly as we can calculate, was that a diet providing 116 grams of protein and 3,498 calories was replaced by one yielding 86 grams of protein and only 2,644 calories. Further, the only vegetables regularly supplied were celery, carrots, turnips, and parsnips, with potatoes now and then, in the proportion of 1 lb. to five persons, added to the soup, and probably kept at near the boiling point for some hours. Again, the heating of the prison was extremely defective, it being in evidence that during the winter the temperature of many cells did not rise above 46° F. We see that the mere energy content of the diet was utterly insufficient for anything but sedentary work, while the deprivation of potatoes and the exiguous supplies of other vegetables courted an outbreak of scurvy. Hence this grim experiment does not establish the necessity for meat in the diet, but is instructive in other ways. We have a sequence of events which may be regarded as pathognomonic of the effects of food shortage. First, a gradual failure of energy, then, accelerated by exposure to cold, surrender to the most accessible infectious disease, which here happened to be

dysentery—whether dysentery had been present in the gaol before the change of diet, formed the topic of an animated controversy between Latham and the chairman of the committee, of which we hold Latham to have had the better. It is also to be noted that, when the mischief had been done, improving the diet did not suffice to limit the disease. Colonel Hehir, in his account of the Kut-el-Amara disaster (third appendix to the Report of the Mesopotamia Commission), records similar observations. Among other points of interest in the Select Committee's report are dietaries of marines and seamen, of prisoners of war in 1797, and of convicts on passage to Botany Bay. The seamen received, we reckon, 4,083 calories, allowing nothing for a daily gallon of beer; the prisoners of war had 1,898 calories—which explains some incidents in Stevenson's *St. Ives*—while the Botany Bay convicts received 2,362 calories on their journey.

ANTITYPHOID LIPO-VACCINE.

THE method of preparing an antityphoid vaccine, about which Mr. Lynch recently questioned Mr. Macpherson in the House of Commons, was described in 1916 by Le Moignic and Pinoy to the Biological Society of Paris, and is spoken of as lipo-vaccine T.A.B. Le Moignic, or Le Moignic-Pinoy, by Tribondeau,[1] principal medical officer of the French navy, who investigated the serological reactions of 150 new entries vaccinated therewith on June 13th, 1917, at Toulon. The cases were followed for thirty-seven days, and showed that after the sixth day agglutinins for typhoid and paratyphoid A and B bacilli appeared in all without exception, the reaction being better marked in the case of typhoid than of paratyphoid B, and of paratyphoid B than of A. After the expiration of a month from the injection some of the serums no longer agglutinated, and on the thirty-seventh day half of the cases failed to agglutinate. As shown by the complement deviation test, the fixation antibodies appear rather later than the agglutinins and disappear about the same time. The activity and multivalency of the vaccine are thus promising, and if its protective powers in man are proved to be as satisfactory as Tribondeau anticipates, its use would have the advantage that one injection only, instead of two to four, as in the case of aqueous antityphoid vaccines, would be necessary; the toxic effects, such as fever and local reaction, it is stated, are very slight. The dose is 1 c.cm. containing seven thousand million of typhoid and paratyphoid A and B bacilli, mixed in equal parts in oil. The experiments of Gautrelet show that toxins and poisons when mixed with oil for the most part lose the power of affecting the nervous system, which they possess when in aqueous solution, and this is quoted by Tribondeau to explain the absence of reactions after the lipo-vaccines.

Medical Notes in Parliament.

Army Medical Promotions.

MR. LLEWELYN WILLIAMS asked Mr. Macpherson, on February 18th, whether he was aware that discontent had been caused in the Army Medical Service by the late list of promotions to the higher ranks of that service, colonels and surgeon-generals, as a result of which a large number of officers, some of whom possessed distinguished records for professional work, had been passed over for promotion; whether these promotions were the result of consideration of the qualifications of the officers by an impartial and formally constituted board of senior officers; and if so, what was the constitution of that board; if such a board were constituted, what instructions were given to it to guide it in making its selection; and, alternatively, if no such board were constituted, on what system was the selection made, and had due attention been paid to scientific and professional qualifications, as apart from purely administrative ability.

Mr. Macpherson replied that the recent promotions were made in some instances among officers who perform purely professional duties, and in others both professional and administrative capacity were duly considered. The promotions were made specially for the purposes of the war, and officers not so selected are still eligible for promotion in the ordinary course. The recommendations of general officers commanding were obtained and carefully considered, and the selections were made by the Adjutant-General, in consultation with the Director-General, Army Medical Service, after exhaustive inquiry, and were finally submitted to the Secretary of State for approval.

Army Dental Service.—In answer to Mr. Pennefather Mr. Macpherson stated that dental surgeons were available in cases of doubt, and frequently carried out inspections where a special opinion was required as to the condition of the teeth of men joining the service. Inspecting dental officers had been employed in commands at home since December, 1915. They carried out their duties under the instructions of deputy or assistant directors of medical services, who were responsible to general officers commanding for the physical fitness of all soldiers. Subject to such general instructions, inspecting dental officers naturally acted on their own instructions. There was no army order forbidding the transfer of dental surgeons with combatant and other commissions to the dental service; but so long as dental surgeons were available for commissions from the ranks it had not been the practice to transfer commissioned officers. Four motor dental ambulances were in active operation at the front—all in France. Five such ambulances had been offered and accepted, none had been refused; four had been delivered, and, so far as he was aware, were in use. The fifth ambulance had not yet been received.

THE WAR.

TETANUS IN HOME MILITARY HOSPITALS: AN ANALYSIS OF 1,000 CASES.

IN the JOURNAL of October 23rd, 1915, Surgeon-General Sir David Bruce published an analysis of cases of tetanus treated in home military hospitals during the first year of the war, and summaries of four further analyses have appeared in these columns. At a meeting of the Society of Tropical Medicine and Hygiene on October 19th, 1917, he took as the subject of his presidential address an analysis of 1,000 cases of tetanus,[1] in which he brought together the results already published, together with the latest figures which had not hitherto appeared. This comprehensive report follows the lines with which our readers are already familiar, but, in reviewing the figures as a whole, Sir David Bruce discusses certain points at greater length. An attempt was made to amalgamate the cases of tetanus arising in England with those which occurred in France before transfer, but, through lack of sufficient data, this was found to be impracticable. Judging from the information available, the proportion of wounded men attacked by tetanus in home military hospitals may be roughly put down as 1 per 1,000. This, however, is not the true incidence of tetanus among the wounded in this war. The wounded in France and the wounded in England are not distinct and separate populations, for the wounded in England were at one time the wounded in France. Probably about 800 cases have occurred overseas. These, added to the English cases, would give the true incidence if every wounded man came over from France, but many return to duty without being evacuated to England. It is therefore not possible at present to give the true incidence for this war, but, roughly, it may be put down as about 2 per 1,000.

The working definitions of general and localized tetanus given in previous analyses are repeated. Among the thousand cases it was found that 896 could be placed in the general and 99 in the local group; in 5 it was doubtful to which group they belonged. Trismus was recorded in 607 cases. In each succeeding analysis the proportion of cases of local tetanus became larger; this may be set down to the introduction of prophylactic injection, and also in a less degree to the greater number of localized cases being diagnosed as tetanus.

The incubation period is again carefully studied. Analysis of the whole number of cases confirms the law already laid down that the shorter the period of incubation the higher the rate of mortality. The remarkable lengthening out of the period of incubation which has taken place during the war has changed the whole picture of tetanus from being an acute disease

[1] L. Tribondeau: *Compt. rend. Soc. Biol.*, Paris, 1917, lxxx, 782-3; and *Arch. méd. et pharm. nav.*, Paris, 1917, civ, 276-282.

[1] *Transactions of the Society of Tropical Medicine and Hygiene*, November, 1917.

almost always fatal to a chronic disease with a case mortality of some 20 per cent. This result may fairly be taken as a measure of the action of prophylactic inoculation of antitoxin.

Of the thousand cases, 594 recovered, giving a mortality rate of 40.6 per cent. This rate is, however, too low, since it does not take into consideration the cases which occurred in France, and which were naturally of a more severe type than those occurring in England. Including the figures for France analysed by Sir William Leishman and Major Smallman, the total mortality in 1,339 cases comes to about 50 per cent. The death-rate in pre-serum days was about 85 per cent. Sir Charles Bell, in his diary, written after the battle of Waterloo, describing a case of severe tetanus, wrote: "There are but two cases living of all that had this affection." The lowering of the death-rate from 85 to 50 per cent. is doubtless due in great part to the introduction of prophylactic inoculation, and it must be borne in mind that during the first months of the war, so far as prophylaxis was concerned, we were still practically in the pre-serum days. The progressive fall in the rate of mortality during the war was well shown in a table printed in a summary of the last analysis in the JOURNAL of December 1st, 1917. In the first year it was approximately 58 per cent., and has since then steadily fallen to 19 per cent. in 1917. Whatever may be the cause, or causes, this result is highly satisfactory.

Among his negative findings, Sir David Bruce states that the figures furnish no evidence of any seasonal prevalence of tetanus. Nor do wounds of the trunk seem to be followed more often by fatal tetanus than wounds of the limbs—in fact, it is rather the other way. Again, from the full figures no case can be made out either for or against the intrathecal route for therapeutic injections of antitoxin, and no useful deduction can be drawn as to the influence of dosage on the curative action of antitetanic serum.

While it is clearly of the greatest importance to arrive at a true estimate of the curative value of antitoxin, the difficulties are at present insurmountable. Thus the greatest variety is found in the mildness or gravity of the cases; complications are frequent and often very severe; while the method of treatment varies according to the predilections of the different medical officers. With so many factors coming into play it is unwise to dogmatize from the figures available, but it should be noted that among the 40 cases not treated with antitetanic serum after the onset of symptoms, 32 died, giving a mortality of 80 per cent., against a mortality of 38.8 per cent. among the 960 so treated.

Summing up the position as it now appears, Sir David Bruce writes:

> Antitoxin has no power of neutralizing toxin fixed in the nervous system. If a fatal amount has been absorbed, then no amount of antitoxin will save the man's life. If there is any free toxin circulating in the blood or lymph the antitoxin can neutralize it, and so possibly prevent further mischief. If, then, a fatal amount has not been absorbed the injection of antitoxin may be of use. By animal experiment it is proved that the intrathecal route is the best. It is believed that the intravenous route is also good, but more dangerous on account of the liability to anaphylactic shock.

While the incidence of tetanus among protected and unprotected soldiers respectively cannot at present be determined, through the absence of the necessary data, there is very strong presumptive evidence that prophylactic inoculations lower the incidence of tetanus among the wounded. A diagram of the ratio of the number of cases of tetanus to the number of wounded shows the great drop in November, 1914. No doubt there were several factors at work, but almost beyond question the introduction of prophylactic injections of antitetanic serum at that time was the preponderating cause. It was not until about the middle of October that prophylaxis was introduced on anything like an adequate scale, and it was precisely at this time that the remarkable fall in the incidence took place. From about mid October the supply of serum became equal to the demand, and thenceforward its use became practically universal. But beyond this the figures show conclusively that prophylactic injection lengthens in a marked degree the incubation period, and, as has been stated many times, the longer the incubation period the lower the death-rate. Among the thousand cases, almost one half certainly received a prophylactic injection. Of these 363 recovered, giving a mortality of 26.6 per cent. Of the 239 cases who almost certainly had no prophylactic dose of any kind 100 recovered, giving a mortality of 58.1 per cent.

As to the value of multiple injections, the evidence is at present scanty, for it is not long since the Tetanus Committee laid down that four prophylactic injections should be given to every wounded soldier at intervals of seven days. The figures, such as they are, seem to justify the Committee in making the rule, since the incubation period tends to lengthen as the number of inoculations increases, and the case mortality to fall. "All that can be said is that there is justification for going on with the experiment until more evidence is accumulated."

Sir David Bruce's efforts to elucidate the problems of causation and cure have been greatly aided by the voluntary labours of Lady Bruce, who, at vast expense of time, entered up the items of information under the various headings, giving to this work an average of some five hours a day during the past three years.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Killed in Action.

SURGEON PROBATIONER D. J. WHITTON, R.N.V.R.

Surgeon Probationer David John Whitton, R.N.V.R., was killed in action on February 11th, aged 21. He was the only son of Mr. William Whitton, and was educated at Kirkcaldy High School and at Edinburgh University, where he was a third-year medical student when he joined the navy in August, 1917.

Died on Service.

STAFF SURGEON G. R. MILL, R.N.V.R.

Staff Surgeon George Robertson Mill, R.N.V.R., died on service on February 11th, aged 37. He was educated at Edinburgh University, where he graduated M.B. and Ch.B. in 1901, and M.D. in 1905. He afterwards acted as senior house-surgeon of the Royal Southern Hospital, Liverpool, and then went into practice at Birkenhead, where he held appointments successively as honorary anaesthetist to the Liverpool Dental Hospital, honorary medical officer of Birkenhead Maternity Hospital, and honorary assistant medical officer of Birkenhead Borough Hospital. He was a member of the Liverpool Medical Institution, and Secretary of the Birkenhead Medical Society. On April 8th, 1909, he joined the Mersey Division of the Royal Naval Volunteer Reserve as surgeon, and was promoted to staff surgeon last year. In the early part of the war he served on the hospital ship *Rewa*, which was recently torpedoed in the Bristol Channel.

ARMY.

Killed in Action.

CAPTAIN G. S. ELLIOTT, M.C., A.A.M.C.

Captain George Stephenson Elliott, whose death we announced in our issue of October 27th, 1917, aged 32, was born at West Charlton, Victoria, Australia, the son of the late Thomas Elliott of Ballarat and brother of General H. G. Elliott, C.M.G., D.S.O., of the A.I.F. He was educated at Ballarat College, where he distinguished himself in both study and sport. On deciding to study medicine, he entered Ormond College, Melbourne University, where he continued his distinguished career. He was winner of the 100 yards University Championship and was awarded his blue for athletics and football. He also played for Victoria in the interstate football contests. He graduated M.B., B.S. in 1915 and shortly afterwards left for overseas. After a few months' work in a field ambulance, he was posted to a battalion and remained there until he met his death at Polygon Wood. He was awarded the Military Cross for his services while R.M.O. Few officers enjoyed greater popularity, and his death has cut short a brilliant career. He leaves a widow and one child.

DEATHS AMONG SONS OF MEDICAL MEN.

Cameron, Percy Grant, Lieutenant Royal Garrison Artillery, attached Royal Flying Corps, youngest son of the late Dr. John Cameron, of Lochgilphead, Argyllshire, reported missing August 19th, 1917, now presumed killed on that date, aged 25.

Mackenzie, Ronald Patrick, Captain Royal Scots Fusiliers, elder son of the late Dr. Alexander Flyter Mackenzie, of Glasgow, reported missing on April 19th, 1917, now presumed killed on that date. He attained the rank of captain on June 1st, 1916.

[We shall be indebted to relatives of those who are killed in action or die in the war for information which will enable us to make these notes as complete and accurate as possible.]

HONOURS.

A Supplement to the *London Gazette*, issued on February 18th, contains a further list of rewards for gallantry and distinguished service in the field. The acts of gallantry for which the decorations are conferred will be announced subsequently in the *London Gazette*. The following awards are made to medical officers:

Second Bar to Military Cross.

Temporary Captain A. Fullerton, R.A.M.C. (M.C. gazetted January 1st, 1917, and bar to M.C. October 18th, 1917).

Bar to Military Cross.

Captains W. Fotheringham, R.A.M.C.(S.R.) (M.C. gazetted August 16th, 1917), F. W. Lees, C.A.M.C. (M.C. gazetted January 1st, 1917), T. A. Townsend, R.A.M.C. (M.C. gazetted November 25th, 1916).

Temporary Captain W. J. Knight, R.A.M.C. (M.C. gazetted May 31st, 1916).

Military Cross.

Captains F. Chadwick, R.A.M.C., G. M. Foster, C.A.M.C., A. McL. Ferrie, R.A.M.C.(S.R.), A. S. Porter, C.A.M.C., R. D. Moore, R.A.M.C., J. G. Morgan, R.A.M.C., G. Young, R.A.M.C.(S.R.).

Temporary Captains E. P. Blashki, R.A.M.C., T. M. Crawford, R.A.M.C., W. C. Douglass, R.A.M.C., J. H. Legge, R.A.M.C., J. O. Thomas, R.A.M.C., P. H. Wells, R.A.M.C., E. W. G. Young, R.A.M.C.

Temporary Lieutenant F. B. Elwood, R.A.M.C.

Fourth Class Assistant Surgeon J. G. Goodman, I.S.M.D.

Third Class Subassistant Surgeon Ata Muhammad Khan, I.S.M.D., has been awarded the Indian Order of Merit of the Second Class.

Dr. Grace Eleanor Soltau has received the King's permission to wear the Insignia of the Third Class of the Order of St. Sava, conferred upon her by the King of Serbia in recognition of her services to the Serbian sick and wounded under the auspices of the Scottish Women's Hospitals for Foreign Service.

NOTES.

British Red Cross and Order of St. John.

The third annual report of the joint finance committee of the British Red Cross Society and the Order of St. John of Jerusalem has just been issued, covering the year ended October 20th, 1917, and including a statement of accounts for the past three years. The administration and management of the great work of the Red Cross at home and abroad during the twelve months under review involved no direct charge upon the funds subscribed by the public for the benefit of the sick and wounded. The income of the Red Cross, however, showed for the first time since the war began a deficiency as compared with the expenditure.

The "Elsie Inglis" Hospital Unit.

On February 18th the King and Queen inspected in the grounds of Buckingham Palace the "Elsie Inglis" Unit of the Scottish Women's Hospitals, the plans for which had been made in broad outline by Dr. Inglis in the few days immediately preceding her death. The unit and the Jugo-Slav Division, to which it was attached, were evacuated from Russia in November, 1917, and it was Dr. Inglis's wish that when the division took up work on another front, as it has already done, the hospital unit should rejoin it. The members of the unit assembled in the grounds of the palace, and the six executive officers were presented to Their Majesties. Dr. Inglis's successor in the chief medical officership is Dr. Annette Benson, and the assistant medical officers are Dr. Lilian Chesney and Dr. Gladys Ward. After the inspection, the King paid a tribute to the work performed by the Scottish Women's Hospitals, and wished the unit success in its further labours abroad.

Automobile Laboratory with Working Annexe.

Mr. Henry S. Wellcome, founder of the Wellcome Bureau of Scientific Research, has recently presented to the War Office for the use of the Army Medical Service an automobile bacteriological laboratory, very completely fitted up. A special feature is an annexe which, when the laboratory is halted, can be quickly set up and the apparatus arranged in it. This annexe and the bacteriological fittings are ingeniously designed so that they can be readily assembled and securely packed on the three ton chassis.

Increased War Office Capitation Grant to Civil Hospitals.

In October last the British Hospitals Association held a conference to discuss the need of an increase in the War Office capitation grant for the maintenance of sick and wounded soldiers in civil established hospitals. Four weeks later a deputation waited upon the Financial Secretary to the War Office. This led to the formation of a joint committee of the British Hospitals Association and of the War Office, which visited representative hospitals in various parts of the country and drew up a report. An Army Council Instruction (No. 144 of 1918) has now been issued authorizing an increase of the maximum daily grant from 4s. to 4s. 9d. for each soldier patient under treatment, as from October 1st, 1917. From the same date a grant of 6d. per diem for each unoccupied bed, held at the disposal of the military authorities by their desire, is also sanctioned.

England and Wales.

Manchester and District Radium Institute.

The report presented to the annual meeting of the Manchester and District Radium Institute on February 15th, when the Lord Mayor was in the chair, stated that during the last year 588 persons had applied for treatment, an increase of 86 over 1916. Seventy were found to be not suitable for treatment, while of those treated 73 were well at the end of the year, 208 had improved, 74 had not improved, 22 had died of the disease, and it was too early to form any judgement of 128. Excluding cases of rodent ulcer, 36 cases of malignant disease (which is about 9 per cent.) were rendered free of signs and symptoms, and 24 cases of rodent ulcer and 13 of non-malignant disease were apparently cured. In the first year of the institute out of 519 cases treated only 45 were reported as well at the end of the year. These figures are significant as showing that with the later and improved methods a far greater proportion of the cases were successfully treated. From the financial statement presented by Sir William Milligan it appeared that the institute had a total credit balance of £1,320, and in addition had £5,000 invested in War Loan. Some discussion arose as to the purchase of a further quantity of radium, Dr. Burrows, the radiologist, pointing to the increased number of persons applying for treatment, and the need for a certain amount for laboratory use.

Milk for Children and Mothers.

The Milk (Mothers and Children) Order, 1918 (dated February 8th, 1918), issued by the Food Controller, acting under the Defence of the Realm Regulations, empowers any local authority within the meaning of the Notification of Births Act, 1907, to arrange for the supply of food and milk for expectant mothers and nursing mothers, and of milk for children under five years of age, and prescribes the conditions under which this power is to be exercised. The quantities of food and milk to be supplied must not in any case exceed the amount certified to be necessary by the M.O.H. or the M.O. of a maternity or child welfare centre working in co-operation with the local authority, or by a person authorized by either of these medical officers, or by some other person appointed by the local authority for this purpose. If one of these duly authorized persons certifies that the provision of food or milk is necessary, food or milk may, in necessitous cases, be supplied free or may be sold at less than cost price. The expression "milk" is to include any preparation of milk prescribed by the M.O.H. or the M.O. of a maternity or child welfare centre working in co-operation with the local authority. A local authority may combine for the purpose of carrying out the order with another local authority or any local food control committee. Power is

reserved to the Local Government Board to require an authority to put the order in force or to combine with other authorities. The medical officers of health may be trusted to see that the milk is good and clean, and in this connexion we may note an interesting address given by Dr. Stenhouse Williams, of University College, Reading, research bacteriologist in dairying, Board of Agriculture, to a recent meeting of the Liverpool Medical Institution. He described the results of experiments concerning the keeping properties of clean and dirty milk under varying conditions. He thought that with attention to, and the inculcation of, hygienic cleanliness from the beginning to the end of milk handling the problem of clean milk would be solved and an enormous amount of spoilt milk saved for the benefit of the community. An appalling number of gallons of milk were, he said, wasted annually through improper and wasteful methods of handling and distribution. For a remedy he looked rather to education of the dairy community in correct methods, than to legislature, especially when it was brought home to the milk producers that clean milk was financially within their reach and as easily obtainable as dirty milk.

A State Medical Service under a Ministry of Health.

We have received from Dr. Sidney Barwise, County Medical Officer of Derbyshire, a copy of a leaflet entitled "A Ministry of Health and a State Medical Service," setting out the changes which, in his opinion, should be made in public health administration. With regard to central administration, he considers that the health powers of the Board of Education, Home Office, Board of Trade, and Central Midwives Board should gradually be vested in the Local Government Board, whose president would become the Minister of Health. The Insurance Commissioners' duties should remain as at present, except that medical research work and the supervision of the medical treatment of insured persons should be transferred to the Ministry of Health. As far as local administration is concerned, on the preventive side, the most urgent matter, in Dr. Barwise's view, is to get rid of small local sanitary authorities employing a local part-time medical officer of health. He therefore desires to see an Act framed for England and Wales on lines similar to the Scottish Public Health Act, leaving it to the county councils to prepare and lay before the Ministry of Health schemes for the division of their counties into suitable districts. With regard to a state medical service, Dr. Barwise sees no reason why a scheme should not be evolved for whole-time officers and part-time salaried medical officers which would be acceptable to the profession while getting rid of the panel system. He suggests that the duty be put upon each county and county borough council to prepare and lay before the Ministry of Health a scheme for providing a number of medical institutions to carry out the work of treatment not only for insured persons, but for their dependants. Each institution should have a whole-time medical staff and specialist officers, who would also be the school medical officers of the district. The remainder of the staff would be part-time officers allowed to engage in private practice amongst the non-insured, every practitioner having the right to have his name entered on the roll of part-time doctors. Each institution should have a small clinic fitted up with the latest medical appliances, and a few beds for operation cases. These clinics should, he thinks, serve also as school clinics, and the ophthalmic surgeons, ear and throat surgeons, and dentists employed by the education authorities should form part of the staff, and so be available for insurance persons. He suggests that existing institutions could be taken as the nuclei of this scheme. In the first instance each panel doctor would have transferred to the institution the whole of his panel. The doctors, whether whole time or part time, would be paid fixed salaries, their clerical work being eliminated as far as possible. "The doctor must be placed in such a position that he can tell the patient the disagreeable truth." Dr. Barwise claims that a scheme for providing treatment on these lines would not disorganize the present arrangements under the Insurance Act. For the carrying out of the details of the curative work of insured persons and their dependants joint committees might be formed of the Insurance Committees and the county councils.

Scotland.

The Morison Lectures.

The Morison Lectures before the Royal College of Physicians of Edinburgh will be delivered this year by Dr. J. J. Graham Brown, lecturer on neurology in the University of Edinburgh. The course will deal with certain disorders of the sympathetic and parasympathetic systems according to the following synopsis:

The general arrangements of the two divisions of the autonomic system, sympathetic and parasympathetic (craniobulbo-sacral division); their functions; their antagonism; their synergic action. Certain disorders of the sympathetic division; their signs and symptoms; their treatment. The parasympathetic division; arrangement of neurones; adequate stimuli under normal conditions; causes of over-stimulation leading to hypertonicity; signs and symptoms of that condition; clinical tests; special diseases to which hypertonus may give rise; their appropriate treatment.

The lectures will be given at the College at 5 p.m. each day, the first on Monday, March 4th, and the second and third on Wednesday and Friday.

The Proposed Ministry of Health.

At a meeting of the Fellows of the Royal College of Surgeons of Edinburgh, on February 5th, the council presented a report on the proposals for a Ministry of Health, more especially in relation to Scottish requirements. After discussion, a number of recommendations were unanimously adopted and embodied in a circular which has been sent to the Prime Minister, the Scottish Members of Parliament, the deans of the medical faculties of Scottish universities, medical corporations, Government departments, and other bodies. The College cordially supports the proposal to form a Ministry of Health having full powers (under parliamentary control) to deal with all matters bearing upon national health. It recommends that there should be a separate Ministry for Scotland with direct parliamentary representation, but, in view of difficulties in the way, expresses the opinion that the desired purpose might be secured by an extension of the duties and powers already entrusted to the Scottish Local Government Board, with the Secretary for Scotland as Minister of Health. It submits that before any bill is introduced the College and other bodies representative of the medical profession should be consulted as to its terms, and that it is inexpedient to complete the necessary enactments before the end of the war. It would be deplorable if legislation, hastily introduced without previous consultation with those who must be concerned in giving it effect, should occasion controversy between the medical profession and the legislature. At the present time the medical profession is very largely employed on naval or military duty, or otherwise preoccupied by work arising out of the war. At a meeting of the St. Andrews University Court on February 8th, it was decided to represent to the Secretary for Scotland that before any measure for the establishment of a Ministry of Health is introduced in Parliament the proposals should be submitted for the consideration of the medical profession and of the medical licensing bodies.

South Australia.

Medico-Political.

In the local Parliaments two interesting Acts have been passed. One has abolished not only the exemptions of the Vaccination Act of 1882 but the compulsory clauses also. The Act had become such a dead letter that the Government was advised that it would get just as good results if it substituted a clause which allowed a proclamation to be issued compelling contacts, in the event of an outbreak of small-pox, to be vaccinated. This is a compromise, and it remains to be seen how it works in practice. The chief feature of the debates, however, was the enunciation of his objections by the new Agent-General,

the Hon. E. Lucas, M.L.C. It is difficult to understand how, in the twentieth century, a man of intelligence can entertain such ridiculous theories as he did, backed up by most quaint references to antivaccination literature. Mr. Lucas was responsible in another bill (the Criminal Law Amendment Act) for a clause which he carried through the Upper House, but which was rejected by the Commons, to the effect that a penalty in certain sexual offences should be "emasculation." The Act provides for the detention of a criminal found suffering from venereal disease after his sentence has expired and until he is cured. The Government has found time to pass an amended Dental Act, but has been unable to devote a minute to the still more urgent need for an amended Medical Act.

An interesting event was the Medical Referendum held in June last. It yielded an affirmative vote of just under 75 per cent.; a fraction more and the Commonwealth would have been invited to conscript the medical profession for service at home and abroad. It is gratifying to know that the highest percentage in favour of such service was recorded by South Australia, the totals being "Yes" 122, "No" 20. This year (1917) has also seen a *modus vivendi* arranged by a Labour Minister (Mr. Blundell), as representing the Friendly Societies' Medical Association, and the British Medical Association. The arrangement seems to be satisfactory, and apparently the services of those who came some years ago from various parts of the earth to take the place of Adelaide doctors will no longer be required.

THE BRANCH.

The South Australian Branch of the British Medical Association flourishes under the renewed presidency of Dr. J. C. Verco. It has had some severe losses, however, during the past year. Dr. C. E. Todd was a member of thirty-four years' standing. A native of Adelaide, a son of the late Sir Charles Todd, K.C.M.G., F.R.S. (for many years Postmaster-General and Government Astronomer), he started in practice with many advantages. Step by step he attained, though after many years, to the height of his ambition—a hospital surgeoncy. He was beloved by his numerous patients, and was especially useful as president of the branch of the Australian Trained Nurses' Association. In 1901 he was President of the Branch of the British Medical Association. He died suddenly of some obscure brain trouble, possibly abscess associated with frontal sinusitis, whilst away on a holiday. His remains were cremated, and a large attendance at the funeral service in St. Peter's Cathedral bore witness to his popularity. Dr. A. H. Gault was a physician to the Adelaide Hospital, and had practised in a suburb of Adelaide for thirty years. A victim to "horse" asthma he was one of the earliest to run a motor car, especially necessary for his work in the hills, where he established a sanatorium for phthisis. Dr. Hunn of Booleroo Centre seemed to have a great future before him when he succumbed to tuberculosis. The mysterious disappearance of a steamer on its way to Papua accounted for the death of Lieut.-Colonel Strangman and Major Flood. At the front there have fallen Captains Gilbert Harvey, Shierlaw, Lucas, and Burden.

Looking on the brighter side it is to be noted that a shower of honours has fallen on the Branch. Professor E. C. Stirling has received a knighthood respecting which it is difficult to say to what special branch of science it may be assigned. Dean of the Faculty of Medicine and Professor of Physiology in the University, sometime Assistant Surgeon to St. George's Hospital, London, and Surgeon to the Adelaide Hospital, though he never engaged in private practice, ethnologist, biologist, palaeontologist, Fellow of the Royal Society of London, it may be said of him, *nihil tetegit quod non ornavit.*

Colonel Hayward's work at Harefield Hospital, and Colonel H. A. Powell's at the front have been rewarded with the C.M.G., whilst Lieutenant-Colonel de Crespigny, Lieutenant-Colonel Fry, and Major Jeffries have gained a D.S.O.; several have been mentioned in dispatches, including Lieutenant-Colonel Newland, whilst Captains Beard, Birch, Kenihan, Wall, Wyllie, and Steele, have received the Military Cross. Of the last batch of fifteen gradnates three have joined the Australian navy and the rest the army.

Correspondence.

ARMY MEDICAL RECORDS.

SIR,—I was glad to read in the BRITISH MEDICAL JOURNAL of February 16th your comments regarding the vexatious clerical work involved in the making of army medical records. You refer to the new system lately devised for the Army Medical Service by the statistical department of the Medical Research Committee. I distrust these new army systems. My experience is that they mean the retention of the old evils with the addition of extra burdens. As regards the overseas records, it must be admitted that the adoption of the field medical cards is all to the good. But how about the home hospitals? As far as I can see, the only change we have under the new system is the addition of the troublesome index card, with its wholly inadequate questions. When will the authorities learn that it is often impossible to give an accurate description of a case by question and answer? What is required is a short summary in the medical officer's own words; this, as a matter of fact, he already has to make on the medical history sheet, and now we have, "in order to spare us clerical work," the index card superadded.

Of course, the obvious way to deal with the matter is to have two documents, and two only—(*a*) for overseas, (*b*) for England. The field card already in vogue would form (*a*). Notes of the case whilst in English hospitals (either on the present case sheets, or on suitable cards, or in a booklet) followed by a summary would constitute (*b*); (*a*) and (*b*) could then be attached at the termination of the case and would form a complete record. The statisticians would in this way have their summaries, and when they wished to do so could refer to the fuller notes. This appears to me to be very necessary if the statistics are to have any value. If the booklet form were adopted, a pocket might be provided to contain the field card.

Another matter arising from this—diet sheets, the bugbear of the M.O. at home hospitals, who frequently is doing heavy civil work in addition to his military duties. In France at base hospitals, under exactly similar conditions, the individual diet sheets are abolished and one diet sheet kept for each ward. Why cannot this be done here? No one can have any intelligent use for the individual diet sheets, which consume vast quantities of paper and usually end their life ignominiously in a lumber cupboard. All the details required for the quartermaster's department are supplied by the daily summaries from each ward. The fetish of the diet sheet has reached such a pitch that recently in a large war hospital a two months' collection of these documents was returned by order of the higher powers to the M.Os. to be added up. This is not so simple as it looks when one is dealing with broken periods and fractions in avoirdupois and fluid measures. Even if it has to be done, surely a clerk whose work it is to deal with figures will make a much better job of it than the average medical man; moreover, he will cost considerably less.—I am, etc.,

February 19th. HOSPITAL SURGEON.

"CRAVING" FOR DRUGS.

SIR,—In the BRITISH MEDICAL JOURNAL of February 9th, in the leading article, you state that I said that there was a craving for morphine and bromide in my evidence in the insurance case. What I particularly stated was that there was no craving for bromide like there is for chloral and morphine.

My experience of veronal is too limited to enable me to state whether there is a craving or not, but I have seen many patients who have taken it and found no desire to go on taking it.

But my experience in bromide is very extensive, and I have particularly observed the question of craving, and I can say with absolute confidence that there is no such thing as a craving for bromide. Time and again I have had patients taking it for many years, and they have stopped it abruptly, and have not had the slightest desire to resume it.

I would not think it necessary to trouble you with this letter but for the fact that I know that there are some

people who have warned patients of the danger of taking bromide lest they should create a habit, and I have seen many patients who have been prevented from having the benefit of the drug because of this fear.—I am, etc.,

London, W., Feb. 19th. J. MACKENZIE.

*** We are glad to publish this explanation, for the reports of the case in the newspapers were concordant as to the reference to morphine, but were discordant in attributing to Sir James Mackenzie the opinion that the craving might exist for bromide.

DIET, STARCH, AND SUGAR.

SIR,—In answer to Dr. H. Campbell's question respecting the diet of diabetic patients previous to the onset of the disease, I think we have grounds for considering that excess of sugar and sweet food is probably injurious, but that a diet of starchy food is not specially injurious as a predisposing cause, or, at least, is much less injurious.—I am, etc.,

Manchester, Feb. 18th. R. T. WILLIAMSON.

POSSIBLE DEVELOPMENTS OF TRANSFUSIONS.

SIR,—Anyone who has carried out a series of transfusions by the multiple syringe method must be impressed by the total absence of injury to the donors. One man has given blood from the same vein upon eight occasions, and expressed himself willing to continue at intervals of fourteen days for an indefinite period. The patient, too, suffers little or no inconvenience. A register of suitable donors, classified under their blood groups, is being prepared at the London Hospital, in order that all cases in which transfusions are indicated may be treated without delay.

These advantages led me to suggest that in cases of severe infection, in which the patient derives no benefit from injections of vaccine, it would be wise to obtain a donor of the same blood group as the patient, and give him injections of the patient's autogenous vaccine. When an immunity has been developed a series of transfusions might be given. The dose would be multiples of 600 c.cm. and not of 10 c.cm., so that even if the concentration of the antibodies in the blood be low, nevertheless a considerable quantity would be introduced.

It must be borne in mind that rabbits and horses do not develop much antibody for streptococci, but it does not follow that man, too, is unable to make these substances.

The procedure is so simple that it must have occurred to many, and perhaps those who have carried it out would be willing to record their results, giving every detail, so that time need not be wasted repeating experiments if they have already proved unsuccessful.

The idea is capable of further development, and perhaps some day we shall reduce still further the mortality due to diphtheria and tetanus by having donors immunized against these bacilli, and using their blood for transfusions in cases of very weak children, and when previous injections of horse serum would lead to anaphylaxis, or serum sickness to fatal results.—I am, etc.,

London, W., Feb. 15th. O. LEYTON.

PROPHYLAXIS IN VENEREAL DISEASE: ITS FALLACIES.

SIR,—The experience of Mr. E. B. Turner, F.R.C.S., which you published last week, is most helpful, and his conclusions are exactly those to which I have been driven.

Incalculable evil will be done both to the army and the civil population if we profess to be able to divest indiscriminate intercourse of its inevitable dangers.—I am, etc.,

J. C. MCWALTER, M.D., Captain,

February 17th. Specialist Sanitary Officer.

THE AUXILIARY R.A.M.C. FUNDS (OFFICERS' BENEVOLENT BRANCH).

SIR,—May I correct an error in your note on this subject on p. 217 of the JOURNAL for February 16th? There is no rule that orphans of officers who are non-subscribers shall have no claim on the benefits of the Fund. The orphans of any of the specified R.A.M.C. officers are eligible to receive benefits.

During 1917, 125 officers whose orphans would be eligible were killed, and there must have been large numbers in 1916 and 1915. Claims on the Fund will be gladly considered if addressed to the Honorary Secretary at the offices of the Funds, 11, Chandos Street, Cavendish Square, W.1.

The Fund (Officers' Benevolent Branch) is for the benefit of orphans of R.A.M.C. officers in the Special Reserve, Territorials, and those holding temporary commissions.—I am, etc.,

W. HALE WHITE, Colonel R.A.M.C.(T.),

London, W., Feb. 18th. Honorary Secretary.

*** We are glad to know that this rule, which appeared in the draft scheme, has been deleted.

Obituary.

THE death has occurred of Dr. WILLIAM JOSEPH SEWARD, formerly medical superintendent of Colney Hatch Asylum. He received his professional education at University College Hospital, and obtained the M.R.C.S. and L.S.A. diplomas in 1875, graduating M.B.Lond. in the following year. In 1878, immediately after completing house appointments at the Bristol Royal Infirmary, he was appointed assistant to Mr. W. G. Marshall at Colney Hatch. Later he became assistant to Dr. Edgar Sheppard, one of the first lecturers on psychological medicine at a London medical school. In 1882, when barely thirty years of age, he succeeded Dr. Sheppard as the medical superintendent. When the London County Council assumed the government of the London (then the Middlesex) Asylums under the Local Government Act of 1890, Dr. Seward was appointed, upon the retirement of Mr. Marshall, to be the administrative medical head of the whole institution, taking over the care of both the male and female sections, and thus ending what had until then been a dual control. During his period of service was inaugurated the After-care Association for the rehabilitation into social life of those patients who had been discharged recovered, and he continued throughout his life to take the deepest interest in the society's welfare, as he also did in the Asylum Workers' Association, of which he was a member of the executive committee. In January, 1903, a destructive fire occurred in the new wooden annexe, adjacent to the main buildings of Colney Hatch, which was demolished in about an hour. In this fire fifty-one female patients lost their lives and the rest were saved with difficulty. This disaster cast a deep shadow upon Dr. Seward's life, and he never recovered from the shock.

Sir ROBERT ARMSTRONG-JONES, to whom we are indebted for the foregoing particulars, writes as follows:

The treatment of the insane under Seward's régime was always one of enlightened and disinterested progress, and the writer of this article is under the greatest obligations to the memory of his old chiefs, Marshall and Seward, for their high example of devotion and attachment to their patients, whilst the welfare of the staff never escaped either of them. Alcohol, in the shape of beer, was abolished as an article of diet under Seward; the Turkish bath for restoring mental patients was first used there; organo-therapy was encouraged by him, and the aid of clinical pathology with the application of the microscope were all adjuncts in treatment which were of intense interest to Seward, and they continued to be aspects in the practice of medicine which engaged his leisure and retirement, for he was a frequent visitor at the meetings of the Royal Society of Medicine, of which he was a Fellow. Seward was an "intermediary" between the old school and the new research one first started in the London asylums by Sir William J. Collins. Nothing was irksome to Seward, and his mind may be described as healthy in the best sense. He was a Mason, and a member of the London County Council Lodge. He was a keen angler, and was devoted to Norway, where he used to fish, and to Switzerland, where he made many walking tours. He liked a game of whist, and he was a real cricketer—preferring rather to play in a small match than to watch the great ones—although he was often seen at Lord's. He was fond of pictures, and rarely missed an exhibition in Bond Street; he was

devoted to his garden, and he delighted in the cultivation of roses, whilst he derived great pleasure from the meetings of the Royal Horticultural Society. Seward's mind was not that of a controversialist, indeed he rather disliked debated questions, but he always expressed his opinions—which were well considered—both critically and fearlessly. His great charm was his complete detachment from bias—he had cultivated the bias of anti-bias more than any other man of the writer's acquaintance, and he was a most genial, well-informed and cheerful personality. He always maintained the complete confidence and friendship of his committee as well as of their officials.

Dr. George Stokes Hatton, who died on January 15th at Wimborne, Dorset, was for many years a well-known practitioner in North Staffordshire, until failing health caused his retirement to the South of England. After studying medicine at St. Thomas's Hospital and at Newcastle-on-Tyne, he obtained the diplomas of L.S.A. in 1879 and M.R.C.S. in 1880, and graduated M.B., M.S.Durh., proceeding M.D. in 1882. In 1894 he became F.R.C.S. Edin. Dr. Hatton held resident posts at the North Staffordshire Infirmary, and, on his leaving there, joined Dr. Orton in practice at Newcastle-under-Lyme. He was soon appointed to the assistant staff as surgeon to the infirmary, and in turn became full surgeon, and then was appointed consulting surgeon on leaving the district. Dr. Hatton was a successful practitioner and possessed surgical skill and dexterity to a marked degree. His death will be regretted by a large circle of patients and friends in North Staffordshire.

The death occurred on January 28th of Dr. George Henry Eccles, aged 76, who had practised in Plymouth for over fifty-five years. After studying at St. Bartholomew's Hospital, Dr. Eccles obtained the M.R.C.S. diploma in 1862, the L.R.C.P.Edin. and the L.S.A. in 1865. Having held the post of house-surgeon at St. Bartholomew's Hospital, he set up in practice at Plymouth, where he held a considerable number of appointments as surgeon to charitable institutions. Dr. Eccles was a man of remarkably strong character and sacrificed much for his religious convictions. He leaves three sons in the medical profession: Dr. G. Tolcher Eccles, of Hove; Captain H. Nisbet Eccles, R.A.M.C.; and Captain G. Dunluce Eccles, R.A.M.C.

Dr. William Cardiff Hossack, port health officer of Calcutta, died in Calcutta on January 5th. He was the eldest son of Mrs. Garden Milne Hossack, of St. Catherine's, Banff, and was educated at the University of Aberdeen, where he graduated M.B. and C.M., with honours, in 1894, and M.D. in 1898. For the last twenty years he had served in Bengal, where he had held the posts of special plague officer, health officer to the Corporation of Calcutta, district medical officer, and health officer of the port of Calcutta. He was the author of a monograph on the rats of Calcutta.

Brigade Surgeon John Law, Madras Medical Service (retired), died at Guildford on February 6th, aged 83. He was the second son of the late Thomas Hooper Law, of Barnstaple, and entered the I.M.S. as assistant surgeon on May 28th, 1858, becoming surgeon on May 28th, 1870, and surgeon-major on July 1st, 1873, and retiring, with a step of honorary rank, on February 1st, 1882. During the later part of his career he held the important appointment of residency surgeon, Haidarabad.

Brigade Surgeon William James Wilson, R.A.M.C.(ret.), died at Southsea on February 8th, aged 80. He was educated at Queen's College, Belfast, where he graduated M.D. in 1860, and took the diploma of M.R.C.S. in the same year; he entered the army as assistant surgeon on April 1st, 1861, became surgeon on March 1st, 1873, surgeon major on April 1st, 1873, and retired as brigade surgeon on May 2nd, 1888. In the old regimental days he served in the 28th Foot, now the Gloucestershire Regiment, and later he commanded the station hospitals at Portsmouth in 1885–86, and at Mhow in 1887. He served in the Afghan war, in 1880–81, in the Southern Afghanistan Field Force; and in the Soudan in 1885, commanding No. 1 Bearer Company in the Suakin Field Force and receiving the medal with a clasp and the Khedive's bronze star.

Deputy Inspector-General James Crawford Dow, R.N. (ret.), died recently at Bath of congestion of the lungs, the result of an accident, when he fell and broke his leg in a rough sea, returning from Australia last May. He was educated at Glasgow University, where he graduated M.B. and C.M. in 1870, and entered the navy soon after, attaining the rank of fleet surgeon on June 4th, 1893, and retiring, with a step of honorary rank, on September 21st, 1904.

Universities and Colleges.

UNIVERSITY OF OXFORD.

At a congregation held on February 16th the following medical degrees were conferred:

D.M.—W. R. Reynell (*in absentiâ*), G. T. Hebert.

UNIVERSITY OF BRISTOL.

The following candidates have been approved at the examination indication:

Final M.B., Ch.B.—*Part I, including Forensic Medicine and Toxicology:* Elizabeth Casson, A. D. Symons. *Part I only:* B. A. Astley-Weston, A. G. Bodman, R. F. White.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

An ordinary Council was held on February 14th, when Colonel Charters Symonds, Vice-President, was in the chair.

Diplomas of membership were granted to eighty candidates found qualified at the recent examinations. Diplomas in Public Health were granted jointly with the Royal College of Physicians to two candidates found qualified.

The Begley Studentship was opened to women as well as to men.

A resolution having been passed by the College of Physicians for the omission of biology from the first professional examination, the subject was referred by the Council to a special committee for report.

The Secretary reported that, in pursuance of the provisions of the new by-laws, the date of the next Council election would be announced by advertisement and by circular on March 8th, and that March 18th would be the last day for the nomination of candidates.

COLLEGE OF MEDICINE, NEWCASTLE-ON-TYNE.

The council of the college has elected Dr. David Drummond to be president of the University of Durham College of Medicine, Newcastle-on-Tyne, in succession to the late Sir George Philipson, and the chancellor has appointed him pro-vice-chancellor of the university. Dr. Drummond graduated M.D.Dubl. in 1876, became physician to the Children's Hospital shortly afterwards, and in 1878 became physician and pathologist to the Royal Victoria Infirmary, and is now consulting physician. He is also joint professor of the principles and practice of medicine in the University of Durham. At the annual court of governors of the college he was elected vice-chairman. At the same meeting it was announced that the number of students at present in attendance was 168, or 26 more than a year ago. The number of women students has increased by 50 per cent., and they now form 25 per cent. of the total. Dr. F. H. A. Clayton has been appointed lecturer in bacteriology, and Dr. Helen G. Clark part-time assistant. The routine work of the department has been increased, as it has been arranged to conduct for a number of urban and local authorities the bacteriological investigations required by the Local Government Board under the venereal disease regulations. Additional accommodation has been provided at the cost of about £600.

CONJOINT BOARD IN ENGLAND.

The diplomas of L.R.C.P. and M.R.C.S. have been conferred upon the following:

G. V. W. Anderson, Mary Andrews, H. C. Apperly, C. W. W. Armstrong, K. E. Attenborough, Loveday S. Banes, M. Baranov, E. R. Batho, C. C. Beney, P. F. Bishop, J. C. Blake, J. S. Boruchowitz, R. B. Britton, H. S. Bryan, F. Caldecott, G. T. Calthrop, J. D'A. Champney, H. A. Chodak, W. B. Christopherson, A. E. Clark-Kennedy, C. B. Cohen, W. Collins, R. N. Craig, T. L. Crawhall, H. T. Cubbon, Jatindra Kumar Datta, C. Depla, A. R. Doyle, F. B. Dutton, F. N. V. Dyer, Abdel Aziz Hassan El-Zenieny, W. Feldman, A. F. M. Fuoss, G. H. Gidlow-Jackson, Eryl Glynne, W. N. Goldschmidt, W. H. Grace, R. B. Green, W. S. Gross, W. M. Heald, J. M. Higginton, E. A. Holmes, J. Hope, H. B. Jackson, W. A. Jolliffe, D. M. Jones, J. W. Jones, M. E. Jones, T. P. Kilner, D. M. Lalâ, F. W. M. Lamb, J. G. Lawn, Marguerite F. J. Lowenfeld, G. E. MacAlevey, H. M. Menage, Daisy K. F. Michael, H. Millett, L. M. Moody, D. M. Muir, Annie S. Mules, P. M. Neighbour, Vijaya Shankar Rao Pandit, E. J. Papenfus, A. L. S. Payne, T. M. Payne, A. V. Pegge, A. Peine, Sybil M. G. Pratt, Joyce B. Reed, H. T. Rymer, H. M. Savery, C. K. Scales, G. A. S. Shacklock, B. B. Sharp, A. G. Shurlock, G. H. Sims, A. R. Tothill, J. T. Wall, A. S. Westmorland, E. Wolff, F. G. Wood.

Medical News.

THE fourth meeting of the Inter-Allied Surgical Conference will be held early next month. The last conference took place in Paris in November last, and an account of its conclusions was published in the JOURNAL of January 5th, p. 28.

THE Home Secretary announced in the House of Commons on February 20th that summer time for 1918 would commence at midnight, Sunday, March 24th, and terminate at midnight, Sunday, September 29th.

THE Parliamentary Secretary to the Ministry of Food (Mr. Clynes) has stated that the number of standard barrels of beer brewed for consumption in the United Kingdom during 1917 was 16,133,800, and that the quantity of materials used for the first nine months of the year was 28,620,800 bushels of malt, 61,200 cwt. of rice, 6,200 cwt. of maize, and 1,613,700 cwt. of sugar or its equivalent. He stated also that the quantity of spirits retained for consumption as beverages in the United Kingdom in the year ending December 31st, 1917, was 18,549,406 gallons.

THE delivery of the Hunterian lecture on the pathological aspects of certain war injuries of the eye, announced to be given at the Royal College of Surgeons of England by Colonel W. T. Lister, on February 25th, has been unavoidably postponed until May 8th.

DR. ROBERT A. LYSTER, lecturer in public health and forensic medicine at St. Bartholomew's Hospital, and county medical officer for Hampshire, has succeeded Sir Shirley Murphy as editor of *Public Health*, the official journal of the Society of Medical Officers of Health.

AT a meeting of the Shakespeare Association at King's College, Strand, on Friday next, at 5 p.m., Dr. Ralph W. Leftwich will read a paper on Doctor John Hall, Shakespeare's son-in-law.

THE Fire Brigade Committee has brought to the notice of the London County Council the work of Mr. Somerville Hastings, surgeon-in-charge of the ear and throat department of the Middlesex Hospital, in connexion with a fire caused by bombs from hostile aircraft. In rendering medical attention to a man who was pinned under some débris, Mr. Hastings shared the risks of members of the Fire Brigade, regardless of the fact that he had no helmet or other protection, and that débris were falling.

AT the annual meeting of St. Mark's Hospital for Cancer, Fistula, and other Diseases of the Rectum, City Road, London, when the Lord Mayor was in the chair, it was stated that soldiers suffering from rectal diseases and injuries were being treated, and that so far all had been discharged cured, although it had been necessary to keep some in the wards for as long as four months. An opportunity has occurred to purchase a vacant site adjoining the hospital and an appeal for £4,000 to complete the amount needed is being made.

STATISTICS for the year 1916 of the twenty-six German towns with a population of over 200,000 each show a decline of 38.3 per cent. in the birth-rate as compared with 1914. The figures for August and September, 1916, were, however, better than for the preceding July, a result, it is supposed, of the facilities given to soldiers for Christmas leave.

THE Reichstag debate, in which the patrons of salvarsan were accused of suppressing salvarsan fatalities, and in which the medical journals were said to be accomplices to the unscrupulous exploitation of this drug, has had a sequel. In an order from the Prussian Minister of the Interior, dermatologists, specialists in venereal diseases, and the heads of medical institutions are required to give a return showing the number of patients treated and of injections given, and the nature and number of the ill effects observed. Information is asked as to the benefits resulting from the treatment of syphilis with salvarsan and its derivatives.

THE first general meeting, since the war, of the German Medical Association was held in Leipzig on September 22nd and 23rd, 1917. It was stated that about 24,000 German doctors were engaged on war work, and that about 1,000 had fallen in the field. The attacks of the insurance societies on the medical profession, and the prospect of loss of independence by the adoption of a state medical service were discussed. Bitter conflicts with the insurance societies after the war were foreshadowed. With regard to the establishment of dispensaries for the treatment of venereal disease it was agreed that the medical profession should be adequately represented. Unanimity was also shown in a resolution calling for higher remuneration in every branch of the medical profession in view of the depreciation of the currency.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

The telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES AND ANSWERS.

VOLUNTEER TRAINING CORPS.

M.O. asks for information as to the conditions of service applicable to the medical officer appointed to a Volunteer battalion. "Everyone," he writes, "seems to agree that the time is not far distant when the Volunteer Force will be mobilized. A medical man is gazetted as 'temporary lieutenant and medical officer.' In his case does length of service qualifying for promotion count from the date of the *Gazette* notice or from the date of mobilization, and is his pay that of the temporary officer or of the Territorial officer?" Authentic information on these points would, he thinks, be of benefit to those who have joined or are about to join the V.T.C.

"LAMBETH DEGREES."

S. N. asks what powers or privileges the Archbishop of Canterbury has with reference to conferring the degree of M.D.

*** The power of bishops to grant licences to practise medicine doubtless originated in the claim of the church, whose authority was embodied in the Pope, to control all matters relating to education. Some historical notes were published in the BRITISH MEDICAL JOURNAL of December 28th, 1912, p. 1766, where an Act of Henry VIII (1511) defining the mode of exercise of the right was quoted. Some twenty years later an Act was passed empowering the Archbishop of Canterbury to grant degrees in divinity, medicine, and arts. These degrees have commonly been known as "Lambeth degrees." Dr. S. D. Clippingdale informs us that the holders wore the same robes as those holding the corresponding degree of the university to which the Archbishop himself belonged. The Archbishop of Canterbury voluntarily surrendered his right to confer the M.D. when the Medical Act of 1858 was passed. In the BRITISH MEDICAL JOURNAL of December 21st, 1912, p. 1718, a licence granted by the Bishop of Norwich in 1561 was quoted in full.

LETTERS, NOTES, ETC.

NEW DIET RESTRICTIONS.

R. J. R. writes to express the opinion that while most people approve of the rationing principle in general they expect an exemption for any particular case in which they are interested, and believe that all that will be necessary is to apply to their doctor for a certificate. "Unless," he continues, "the regulations for special certificates are made very strict and very definite, there is a risk of very extensive evasion of the orders of the Food Controller. The case of milk is, perhaps, the most important, the case of cream and butter being considered with it; but a particularly flagrant example is that of beef-tea. Taking into account the very small food value of this pleasant extract and the proportionately large amount of the best meat sacrificed to make it, it is to be hoped that in this instance the Food Controller's ruling will be almost prohibitive of certificates."

THE ADVANTAGES OF TEPID BATHS.

DR. GERALD W. MAW (Bedford) writes to recommend the use of tepid baths both as a war economy and because he believes that many people injure their physical condition by frequent and prolonged bathing in hot water. He quotes the case of

a middle-aged man who consulted him on account of "a feeling of general lassitude, disinclination for exertion, and tendency to take cold." He had complained of this state of affairs for six months, and attributed it to a change of residence from a bracing to an enervating climate. He had always led a regular life, spending a great deal of time out of doors, and had not had an illness for years. His heart was found to be healthy, and so, apparently, were his digestive and excretory organs. The urine was normal. The lungs were slightly emphysematous. The patient stated that until the last six months he had always had his bath cold or tepid. Latterly, having an unlimited quantity of hot water, he had been in the habit of taking a hot bath nightly and staying in it about fifteen minutes. He was recommended to discontinue the hot baths entirely, to sponge rapidly with tepid water at night, and in the morning to immerse himself in a tepid bath, and then sit up in it for three minutes with the cold water tap running. This change soon restored him to his old state of physical well-being.

Tonsils and Adenoids.

Mr. H. Clayton Fox, F.R.C.S.I. (London, W.), writes to express the opinion that in the correspondence one point as to the etiology of hypertrophied tonsils has been overlooked, or at least not discussed. "I refer to the influence of nasal obstruction, due to any cause, congenital or acquired. Every child with nasal obstruction is a mouth breather, and this means that air laden with microbes (especially in the poorer dwellings) are continually infecting the tonsils, with obvious results. As to treatment, my own experience leads me to believe that nasal obstruction is the prime factor—adenoids should be removed as early as possible, chronic rhinitis treated and followed up by careful and persistent breathing exercises. With a healthy nose and nasopharynx, and, of course, having excluded other sources of oral infection, most tonsils will, unless enlarged by specific fevers, undergo involution in their own good time."

Saccharine and Digestion.

Complaints having been made in Germany of digestive disturbances following the use of saccharine as a substitute for sugar, Professor Best (*Muench. med. Woch.*, September 18th, 1917) has investigated the matter by giving comparative test meals consisting of tea and bread with sugar, or one tablet of saccharine. Analysis of this material taken from the stomach at the height of digestion showed that the total acidity of the gastric juice was considerably greater when saccharine was given instead of sugar. Investigations also showed that, in addition to stimulating the secretion of gastric juice, saccharine probably delayed the passage of food from the stomach. Best concludes that saccharine should be withheld in cases of hyperacidity, and that gastric and duodenal ulcer should certainly be regarded as contraindications for the use of saccharine, which in other respects cannot be regarded as injurious.

Malthusianism and Morality.

Dr. Binnie Dunlop (London, S.W.), writes: Is it, as Mr. E. B. Turner states (p. 208), "a fact well known to all social workers that the standard of what I may call practical morality among young women of every class of society has gradually deteriorated since, some twenty years ago, the Malthusian propaganda began and the public display and advertisement of Malthusian appliances followed"? Although for years I have been constantly discussing this propaganda with social workers I rarely before the war heard the suggestion that it had increased promiscuity. Can Mr. Turner produce any evidence that promiscuity had been increasing? Malthusian propaganda began forty years ago.

The Night Screaming of Congenital Syphilis.

The *Brazil-Medico* of October 20th, 1917, contains a communication from Dr. Cassio de Rezende of Guaratinguetà pointing out that the nocturnal wakefulness and fretfulness with almost continuous screaming which is an indication—often the only one—of congenital syphilis in infants is generally designated in South America as Sisto's symptom, after a distinguished Argentine physician who is believed to have been the first to describe it. Dr. Genaro Sisto, professor of paediatrics in the Medical Faculty of Buenos Aires, wrote much about what he called a new symptom of hereditary syphilis. His first paper on the "syphilitic scream" appeared in *Archivos Latino-Americanos de Pediatria* in 1906; in 1909, in his clinical lectures on infant pathology, he related a case in which he identified the disease by this symptom alone and effected a rapid cure by antisyphilitic treatment. Those lectures were translated into French in 1910, under the title of *Conférences de pathologie infantile*, by Professor V. Hutinel, who contributed a preface in which he endorsed Professor Sisto's claim of priority in the description of the symptom. Dr. Cassio de Rezende, however, shows that the symptom was fully described by Eustace Smith in the second edition of his *Practical Treatise on Disease in Children* which appeared in 1870. The symptom is coupled with the name of Eustace Smith by Dr. Robert Hutchison in his *Lectures on Diseases of Children*, published in 1904. Apart from actual attacks of screaming, great restlessness, and irritability at night, often attended by drowsiness by day, ought, if persistent, to arouse a suspicion of syphilis. The cause is probably pains in the bones.

The Belgian Doctors' and Pharmacists' Relief Fund.

The following subscriptions to the Fund have been received during the week ending February 18th:

	£	s.	d.
Dr. John Orr	1	1	0
Dr. Theodore Thompson	5	5	0
Sir Felix Semon	2	2	0
Dr. W. F. Haslam ...	2	2	0
Mr. W. S. Turner	0	2	6
Mr. F. P. Sergeant ...	0	10	6
Mrs. Des Vœux	5	0	0
Surgeon-General F. J. Lilly, R.N.	2	2	0
Royal College of Physicians of Edinburgh, per Dr. Norman Walker	26	5	0
Dr. Boodle	0	7	0
Dr. Des Vœux	25	0	0
Sir F. Needham, M.D. ...	5	0	0
The Society of Apothecaries of London ...	100	0	0
Dr. R. Stanley Thomas...	1	1	0
Mr. E. Spencer Evans* ...	0	10	0
The Countess of Leven and Melville	25	0	0
The Lady Betty Leslie Melville	25	0	0
Mr. H. Gaselee	3	3	0
Miss May Rathbone ...	5	5	0
Major G. Grey Turner, R.A.M.C.	5	5	0
Dr. F. W. Goodbody ...	2	2	0
Mr. H. James Kluge ...	3	3	0
Mr. J. R. Reith	1	1	0
Dr. J. M. Chisholm ...	2	2	0

* Monthly donation during the period of the war.

Subscriptions to the Fund should be sent to the Treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W.1, and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

Prescription Writing in the Metric System.

Dr. Sydney Whitaker (Liverpool) writes: This method of expressing the dosage of drugs has happily come to stay, but at present it is hindered by lack of uniformity. For example, students of the Liverpool University are taught to express quantities by certain symbols; in Bruce and Dilling's *Materia Medica and Therapeutics* one finds other symbols, while in H. A. Hare's *Textbook of Practical Therapeutics* yet other symbols are used. Thus, for example, the following prescription would be written in the following ways:

	Imperial Measures.	Metric Measures.		
		Liverpool University.	Bruce and Dilling.	H. A. Hare.
℞ Vin. colch. ...	m xv	1 mil	Ml 1	Cc 1
Mag. carb. p. ...	gr. x	6 dcg	Dg 6	Gm 0.6
Mag. sulph. ...	gr. xv	1 grm	G 1	Gm 1
Aq. menth. pip. ...	ad ʒ j	30 mils	Ml 30	Cc 30
Mitte	ʒ viij	240 mils	Ml 240	Cc 240

As if to add to the confusion, it is customary in most countries in which the metric system is used to express the dose of liquids by weight, while many French physicians would, I believe, express the above dose of heavy magnesium carbonate thus, 0.6 décigram. It would be well if English and American teachers of and writers on materia medica and therapeutics could come to some agreement, and bring the matter before the next International Medical Congress for settlement.

A Disclaimer.

Lieut.-Colonel C. S. Myers, F.R.S., R.A.M.C.(T.C.), (Moss Side Military Hospital, Maghull, near Liverpool), writes: My attention has been called to an appeal for funds now being circulated by the Medico-Psychological Clinic, Ltd., in order that it may deal with "the tens of thousands of our bravest heroes . . . discharged from the navy, army, and air service, useless and helpless, suffering endless torture from such maladies as insomnia, states of anxiety and exhaustion, uncontrollable emotions, . . . etc." In this circular I am described as one of the two consulting physicians to the clinic. Will you allow me to state that this use of my name is wholly unauthorized, and that only once—four years ago—have I had any relations or communication with the clinic, when I was invited by letter to join the staff, and sent a written reply declining to do so?

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	6	0
Each additional line	0	0	9
Whole single column	4	0	0
Whole page	12	0	0

An average line contains six words.

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

Note.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.